Poultry House Construction with

CELOTEX

BRAND

INSULATING CANE BOARD

TRADE MARK REGISTERED U. S. PATENT OFFICE

CELOTEX FARM SERVICE, 919 N. MICHIGAN AVE., CHICAGO, ILLINOIS

CELOTEX CANE FIBRE INSULATION

CELOTEX is board-form insulation made by felting or weaving together strong cane fibres. It combines high insulating value with structural strength. It is light to haul and handle—easy to cut, and saws like wood.

All Celotex cane fibre products are manufactured under THE FEROX PROCESS (patents applied for), an integral chemical treatment toxic to FUNGUS GROWTH, DRY ROT, TERMITES, and which effectively protects Celotex against these and similar agencies of destruction. THE FEROX PROCESS is fully described in Technical Note No. 42.

THE FEROX PROCESS is of particular value to the farmer. It is on the farm rather than in the urban community where the ravages of these pests are most noticeable. Look at your own barn and other building timbers close to the ground. You may find them rotted away or decayed. FUNGUS GROWTH or TERMITES or both, cause this damage. Celotex is protected against such attacks.

Celotex Building Board is sold at lumber supply yards. It is available in the following sizes: 4 feet wide, $\frac{7}{16}$″, $\frac{3}{4}$″ and $\frac{7}{8}$″ thick, and from 7 to 12 feet long. The surface is smooth for use as interior finish in all sorts of buildings, and to take paint. Celotex Lath is 18″ wide and 48″ long, $\frac{1}{2}$″, $\frac{3}{4}$″ and 1″ thick. It is an exceptional plaster base with full insulation value for walls and ceilings of the farm home.

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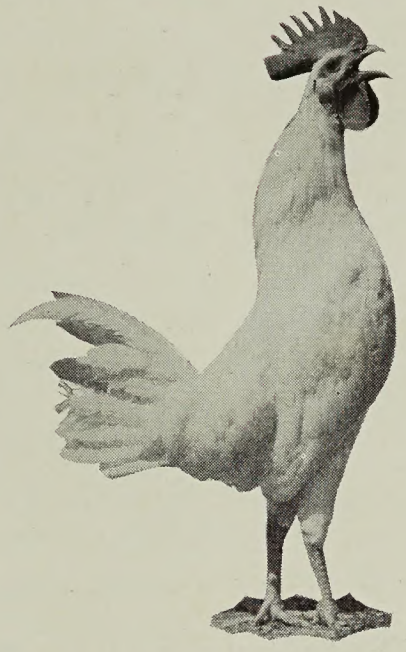
INSULATING CANE BOARD
(REG. U. S. PAT. OFF.)

POULTRY HOUSING



POULTRY RAISING can become profitable only when the business is carried on in proper buildings. Birds of good breeding strains for egg laying ability no matter how well fed, will not return maximum profits unless well housed. The poultry house is the hen's home and to be comfortable must be cool and well ventilated during the summer yet provide ample protection during the coldest, most blustery winter weather. Extremes in temperature always result in decreased egg production.

Impure air, dampness, drafts and insufficient sunlight have been generally overlooked in the common "chicken coop." But much thought has been given to these important things in the construction and location of modern poultry plants.

In the northern part of the country where cold and snow require close housing for weeks at a time, a poultry house should have tight walls and be free from drafts. Plenty of light and fresh air should be provided.

In the South, where there is little necessity for close housing, the shelter may be open on the front wall to admit the sunlight and ventilation that helps to keep the house in a sanitary condition. Even here protection must be given to the flock against sudden weather changes.

Location

The general principles of good poultry housing apply to all regions. In selecting the location of a poultry house on the farm, consideration should be given to light, soil and elevation, and to insure proper ventilation. It is not advisable to locate the house immediately adjacent to other farm buildings. It should face the south or southeast to permit the maximum of sunlight to enter the house. It should have proper drainage. It should also be located with consideration for efficiency in operation.

Clean ground free from contamination, where last year's chickens have not run, is a requirement and preventive against disease.

Ventilation

Ventilation cannot be given too much consideration. The laying house should be comfortable, not too hot or cold at any time, yet the air must be clean and fresh.

The presence of large quantities of moisture in the poultry house increases the need for good ventilation. Two hundred hens breathe out and void 28 quarts of water every 24 hours. That is like pouring two 14 quart pails of water onto the floor of a 200 hen laying house. The excess moisture must be removed to keep the poultry comfortable and healthy.

Windows properly hung to aid the air movement, together with the installation of proper intake and outlet vents for the renewal of clean air without drafts during winter housing, are important to the health of the laying flocks.

Temperature Control

If the air in the poultry house and outside were all the same temperature, no ventilation could occur other than that produced by wind movement. As the air in the house (through body heat of the flock) is warmer in the winter than the air outside a pressure is set up to produce a circulation of air in the house as well as through the ventilating system. Lowering the ceiling in houses with high roofs and angles reduces the area and improves the room conditions for comfort of the housed birds. It is apparent that conservation of animal heat through the use of Celotex in walls and roof insures proper operation of the ventilating system.

Poultry are susceptible to sudden temperature changes, particularly the baby chicks in a brooder house. Though the maintenance of a high temperature is not required in a laying house as it is in a brooder house, the laying hen must be protected against extreme variations in temperature, especially if uninterrupted egg production is desired throughout the winter months, when it is most profitable to the owner.

Work in temperature controlled houses is materially reduced and the water fountains do not freeze in cold weather.

Walls

Poultry house walls and roof must keep out rain, snow and cold winds. The walls on the east and west are generally built without window openings and must be tight and draft-proof. Lumber and roofing paper on the outside of studs for wind protection are common construction, but will shrink with ordinary sheathing boards. It, therefore, becomes impossible to govern circulation of fresh air on account of cross drafts and air leaks, unless the house is lined. This is just one sound reason for Celotex construction. It gives tight walls and roofs that prevent cross drafts and allow control of air circulation.

Celotex for Poultry Houses

Broad strong Celotex boards are applied so that the joints come only on the framing members. The result is a well insulated, draft-proof house in which ventilation can be carefully controlled. By lining walls and roofs with Celotex, farmers have remodeled many an old barn or shelter into an efficient poultry plant. This gives the important advantage of insulation and strong, tight construction.

When used on exteriors in single wall construction Celotex replaces lumber, making walls stronger than they would be with wood sheathing as ordinarily applied. A layer of Celotex gives insulation equal to two layers of lumber and a layer of roofing paper.

Extra thicknesses of Celotex can be used with all the structural sturdiness and tight wall values of the best type of wall construction.

THE BROODER HOUSE

Brooding chicks require more attention to exacting details than any other phase of poultry management.

While successful brooding requires painstaking care during the first few weeks, the essentials of success are not complicated and may be attained by those who make thorough preparations, use care in management and exercise good judgment.

It should be borne in mind that money, equipment, and time invested in chicks may show either a profit or a loss in a comparatively few weeks. It necessarily follows that the major preparations essential to success must be made before the chicks arrive. Provisions for securing healthy, vigorous chicks, a clean house with brooder stove tested and in operation, located on clean ground must all be made first.

In brooding baby chicks three essentials should be emphasized. These are: Correct temperature of the stove, installed in a tight walled house; proper food properly fed; and rigid cleanliness. The last is especially important.

The plans shown in this booklet were designed in consultation with poultry authorities to meet these conditions with a minimum of cost and maximum of satisfaction.

Temperature Control

Whatever type of brooder stove is used, should be started at least two days before the baby chicks arrive. Then its operating adjustments will be understood and the room temperature regulated before the chicks are put under the hover.

The brooder stove temperature should be 95 degrees at a point one inch from the floor and just under the outer edge of the hover.

In extremely cold weather this temperature should be increased to 100 degrees. For late season brooding, 90 degrees is generally sufficient when the weather is warm. This temperature should be reduced about five degrees a week until the chicks are six to eight weeks old, when the stove will not be needed.

THE SHED TYPE BROODER HOUSE

(*Plan on page 16*)

A Celotex insulated brooder house with a well regulated stove and properly operated ventilating flues, provides a safe starting house for baby chicks. Overheating and chills in the first weeks of brooding have resulted in a high mortality rate in baby chicks, avoidable under correct operation in houses built with protection of Celotex in floor, walls and roof.

Ventilation

Proper ventilation is provided by the air intake located in the rear wall and the novel yet simple window construction employed. The circulation of air is increased by the heat from the brooder stove. The ventilation system shown will remove the stove gases and the foul, moisture laden air, bring in fresh clean air and at the same time avoid harmful drafts.

Walls and Floor

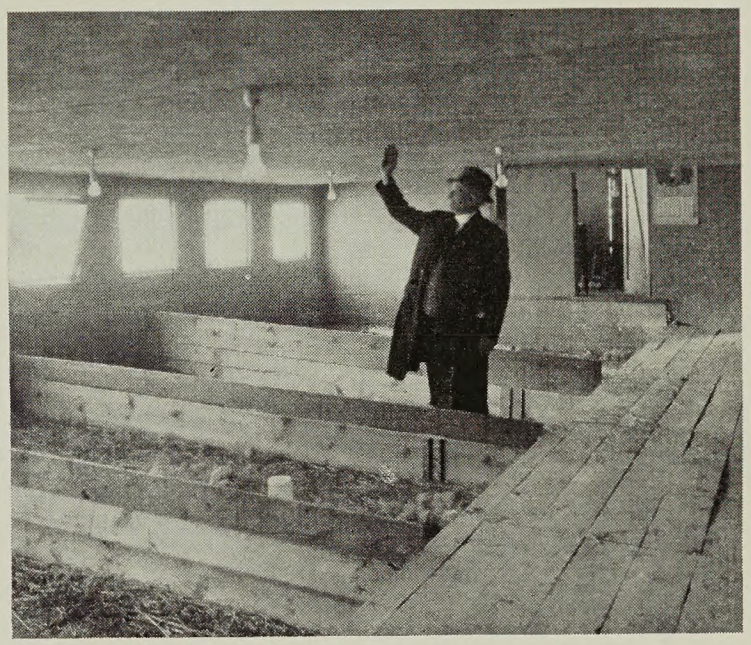
The walls consist of a single layer of Celotex, sized and painted on the outside for weather protection. The roof and floor are also insulated as shown on the drawing.

The wall constructed of one layer of Celotex is warmer than one made of ordinary sheathing and drop siding and much lighter in weight. The house is economical to build, warmer than usual and readily portable.

The floor is insulated with a layer of Celotex, painted on the underside with asphalt paint, then laid over floor joists before the finished floor is applied.

Windows

Glass substitute (such as Cel-O-Glass, "Vita" Glass and others) is being endorsed by leading poultry authorities on account of the penetration of the beneficial ultra-violet rays which do not pass through ordinary window glass. The use of a good glass substitute is recommended with the suggestion that mullion strips, the same as in window sash, be used.



Strong, tight walls with correct ventilation provided by Celotex insulation have made this brooder house at Clinton, Iowa, a profitable building.

The 10 foot by 12 foot house shown in the plan is built on skids to be readily portable, as it is highly desirable that new chicks be raised on clean ground.

The interior of the house should be thoroughly cleaned and sprayed with a good disinfectant before each batch of chicks is put in.

The brooder house constructed from these plans will provide 300 baby chicks with an ideal home—strong, warm, light in weight, well ventilated, dry, and with an abundance of light.

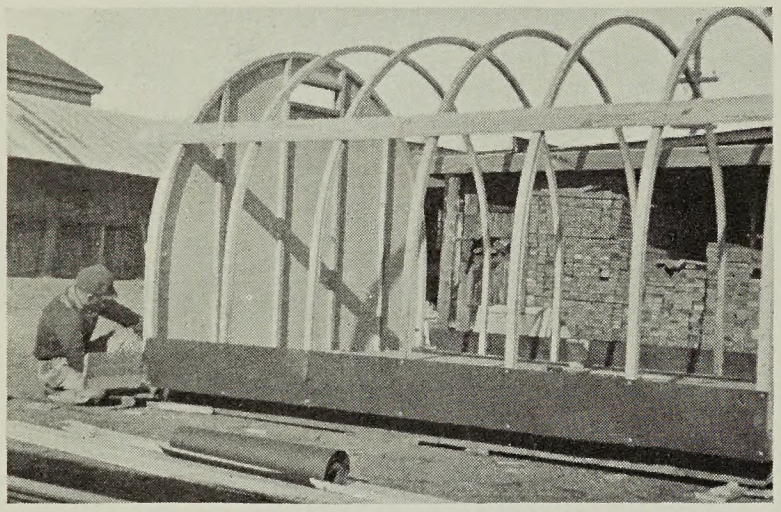
In the fall when the brooder house is not used it makes an ideal building for drying seed corn.

CYLINDER BROODER HOUSE

(Plan on pages 18 and 19)

EASY TO BUILD — AT SMALL COST

This unusual type of insulated brooder house offers two important points. The economy in cost of materials used is one, and the ease in construction by home labor or contractor is another.



Building the cylinder brooder house.

These Advantages:

1. It costs less than any insulated brooder house of the same size.
2. Stronger wall and roof construction.
3. Exact window lighting requirements.
4. 100% floor areas for unobstructed work room.
5. Ventilation a certainty.
6. No insect breeding places because of smooth walls.

Complete front and back framing and apply a 12″ strip of waterproof paper around the house at the floor line. Apply siding all around with well finished corners, allowing for openings, up to 2′ 0″ above floor line. The drip boards (length 13′ 4″) are then placed with even overhangs at both ends, and then the sheathing is continued up over the top.

When fitting the front siding, cut boards at window opening with a ¾″ overhang, reducing the opening thus forming a window stop.

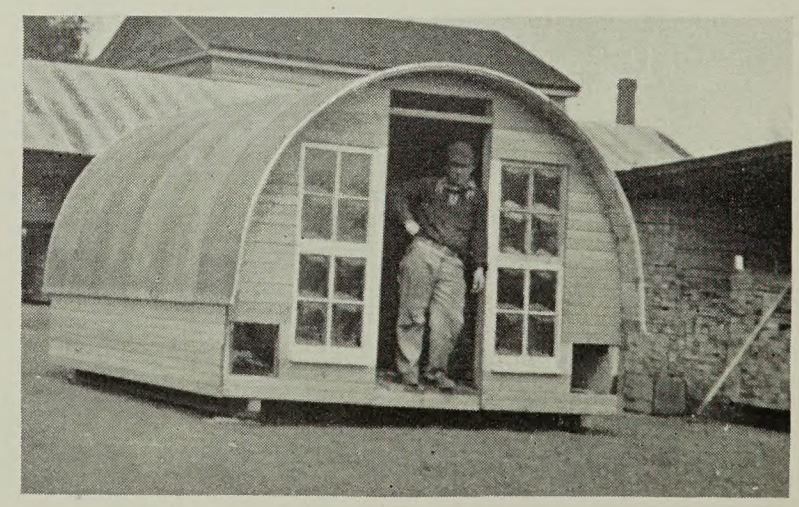
Celotex lining should be applied to the under curved surface of the bow rafters before lining the ends (front and back). The edge of curved boards adjacent to end walls should be notched around the end wall studs.

A single nailing strip (one of the 4 strips in a bow cut from 2″ x 4″) is then added, over the Celotex, at the end bow so as to furnish a nailing base for the edges of the end (back) lining. Celotex lining on front end wall of house is cut to fit in between the studs and is back nailed to the outside siding with lath nails.

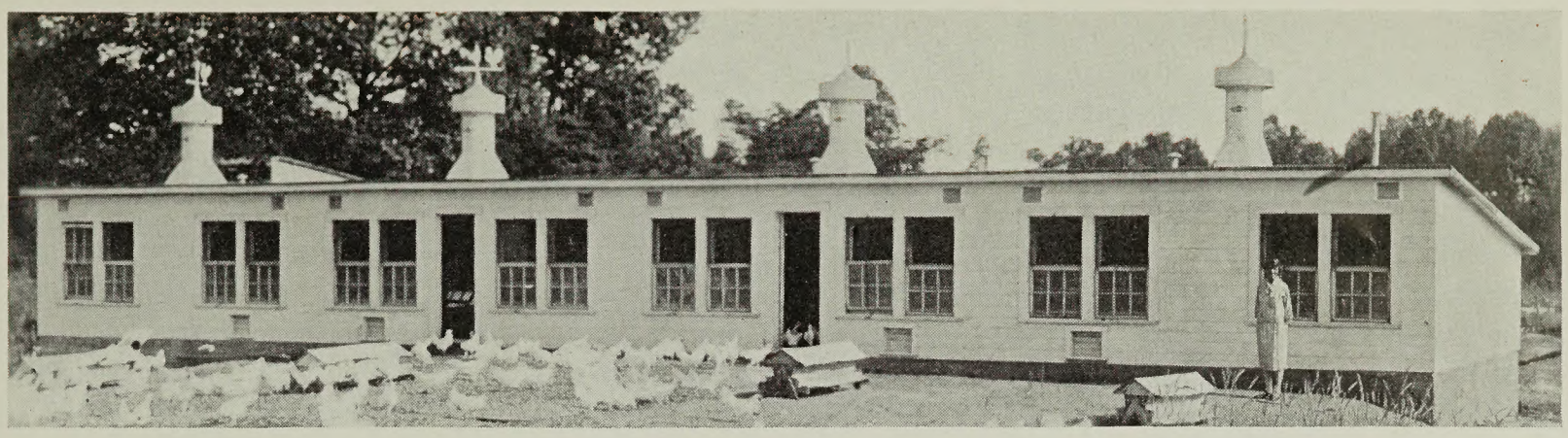
Roll roofing is laid with a good lap, and nailed through to roof deck. At drip board, roofing is cut ½″ full for water drip.

Two 1″ x 12″ boards form a protecting baseboard 24″ high. Lattice battens are nailed over Celotex joints. Door and windows are set, and the house is complete.

The completed cylinder brooder house will be an efficient building. With it you are sure of greatly reduced mortality among young chicks. You can erect it at small cost and will find that its general utility is far beyond any claims made for it. The house can be built by two men in sixteen hours, and the waste, mostly nubbins, does not fill a bushel basket.



A new cylinder brooder house all ready for a fresh batch of baby chicks.



A new modern Celotex insulated laying house where egg production is maintained throughout the year.

THE LAYING HOUSE

(*Plan on pages 22 and 23*)

Facts

ONE COMMON TYPE of poultry house has a shed roof sloping from front to rear. It is easy and economical to construct and allows sunlight to flood a large part of the floor area. The combination roof type with broken roof area one-third of the slope to the front and two-thirds to the rear, is also a popular design. These types allow front windows of a good height. The gable type is generally used for large flock requirements with square houses larger than 20x20 feet.

Long narrow houses are drafty and cold as the roosting flock is too close to the cold window area.

Floor Area

Allow 3½ to 4 square feet of floor space per bird, the light breeds requiring less room than the heavy. Many times there will be a tendency to crowd the fowls too much. This will prove unprofitable both in production and in vitality of the flock. Houses should not be higher than required for headroom for the attendant.

Windows

It is generally accepted that the front window should provide one square foot of light area to every ten or twelve square feet of floor space. Windows in the rear wall underneath the dropping boards are desirable for even distribution of light on floor area. This will prevent piling up of floor litter in darkened portions of the floor as chickens face the light when scratching.

Ventilation

Intakes for fresh air are provided both in the rear wall and between windows in the front walls.

The outlet flue built in the center of the house is one of the most important details of this ventilating system. Adequate capacity of the outlet flue for a house approximately 20x20 ft. is a flue 18 in. square, or a round flue at least 16 in. in diameter. The head of the ventilator should be located above the highest point of the house to assure satisfactory operation and the flue itself is carried to within 14 in. of the floor. Insulating the outlet above the ceiling line will improve the upward air movement.

If a long house is built of several sections the same ventilation for each section should be employed.

Walls and Roof

Different sections of the country with their individual climatic conditions will of necessity require a variation in the amount of Celotex insulation to be used for the poultry house. This plan is adequate for average conditions.

Southern and Pacific Coast climates will generally require the use of one layer of

Celotex as exterior finish, or sheathing. For houses in the northern and colder climates of this country an additional layer of Celotex insulation is recommended.

For the ceiling, a layer of 3/4 in. or 7/8 in. Celotex will be found advantageous *in all climates*, and will maintain production and protection from the sun's rays in the south as well as more accurate temperature control in the north throughout the year.

Celotex may be painted and used as exterior finish or it may be covered with siding, stucco, shingles, etc.

If it is desired to insulate a house built of tile or masonry, furring strips are nailed to the tile or masonry wall 16 in. on center. The application of Celotex is then the same as on frame construction.

Open Front House

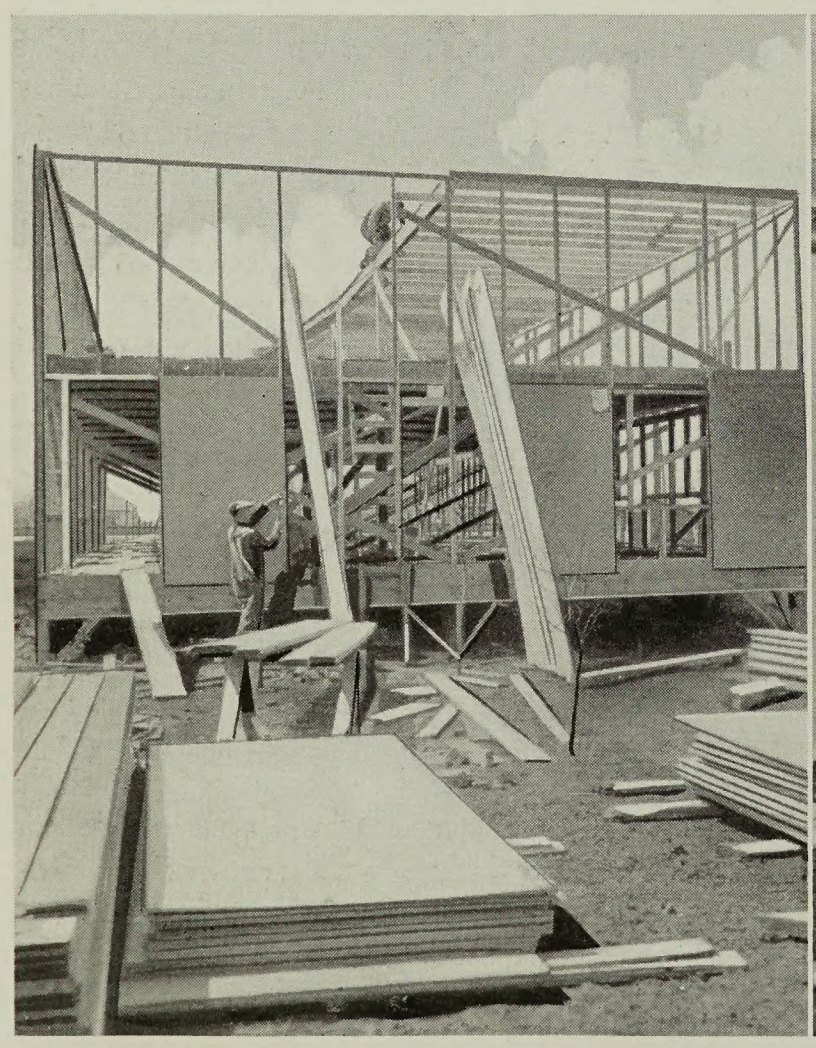
In the Southern states, the open front house is desirable. The front wall may be constructed with two 5x6 ft. openings 2 feet from the floor, the front framing members consisting of 2x4 in. studs doubled. These openings shall have removable sash frames in three sections which may be slipped into place and held with buttons or fasteners. The use of glass substitutes is recommended for the sash.

It is advisable to make these sash removable in order to store in the summer when birds are outdoors. This will lengthen the service of the sash. Cloth may be put on frames for use during rainy weather.

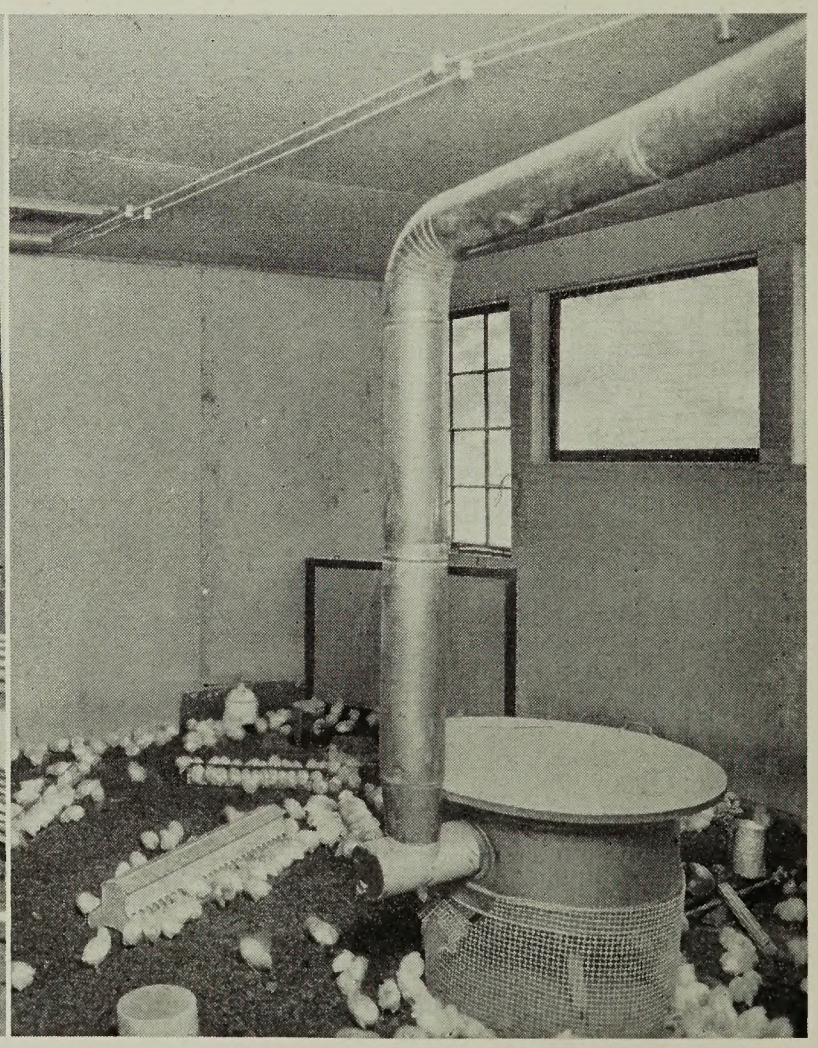
Floors

Two types of floors are used in poultry houses, concrete and wood, although concrete is most desirable. Though the cost is more, concrete is permanent and has many advantages over any other type of floor.

Gravel, broken tile or cinders make the most satisfactory fill. After the concrete is poured to a thickness of three or four inches, it should be covered with a two-ply roofing paper carefully laid with sufficient laps, and mopped with asphalt or pitch. This will pre-



The two-story poultry house has advantages of efficient management at lower operating costs.



This Celotex insulated brooder house keeps out cold and drafts and saves fuel.

vent moisture coming through the floor. Two inches of concrete is then poured for the surface floor, composed of 1 part cement, 2½ parts sand and 4 parts pebbles.

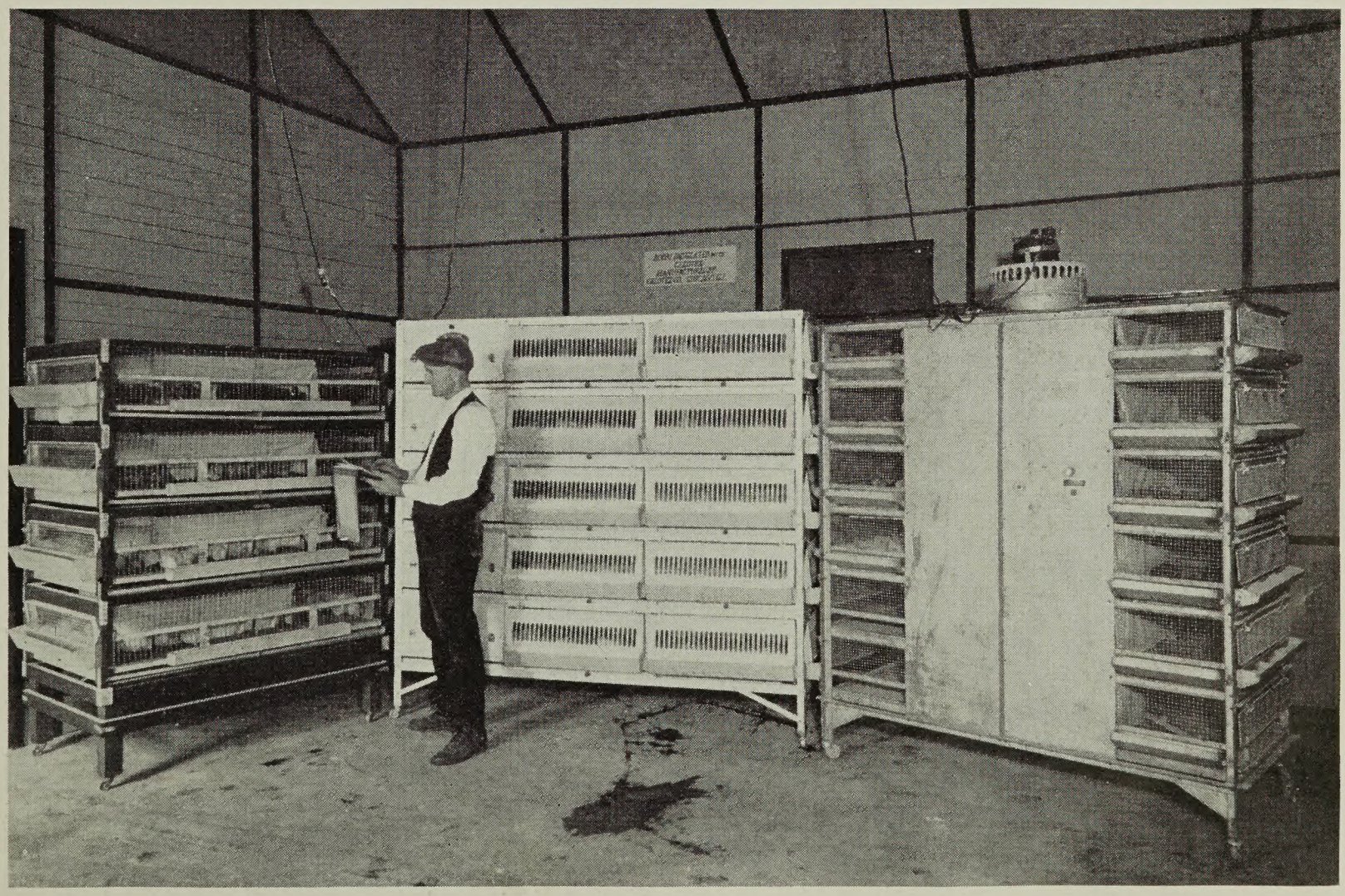
The surface of the cement floor should be trowelled smooth, to make possible sanitary cleaning, scrubbing and proper disinfecting.

Anchor bolts 8 in. long should be set at intervals to fasten the sills of the framing to the foundation.

INCUBATOR AND BATTERY BROODER ROOMS

In incubator rooms, in battery brooder rooms, and in the new type hen battery rooms where layers are confined in individual cages, where control of temperature is a vital factor, the increased financial value of the multiple batches of young chicks, and layers makes it imperative that their rooms be thoroughly insulated. Care and planning should take into consideration all the troubles which are common to the raising and managing of poultry.

Remodeling these rooms with Celotex has always proven a preventive against chick losses due to draft and changing temperatures. As the application of Celotex to these rooms is simple, and as standard construction is usually followed in their building, no plans are presented here for their erection.



Chicks one to two weeks old are extremely tender and cannot stand drafts or chilling temperatures. In this commercial battery brooder, operated by North Carolina State Agricultural College, Celotex on walls and ceiling effectively insulates against outside weather. Celotex can be added to present buildings.

In new hatchery rooms Celotex may be used both as sheathing and interior lining. The use of ¾ in. or ⅞ in. Celotex is to be particularly desired for the roof where the majority of the heat escapes.

Present hatchery rooms may be adequately insulated for protection by the application of Celotex to the studs and roof rafters or ceiling joists. Directions for nailing Celotex will be found on next page under the heading "Application of Celotex on Walls and Roofs of Poultry Houses."

RANGE SHELTERS

(*Plan on page 14*)

THE SUMMER range shelter has been designed to make room in the brooder houses for a second brood of chicks sometime in late April or early May.

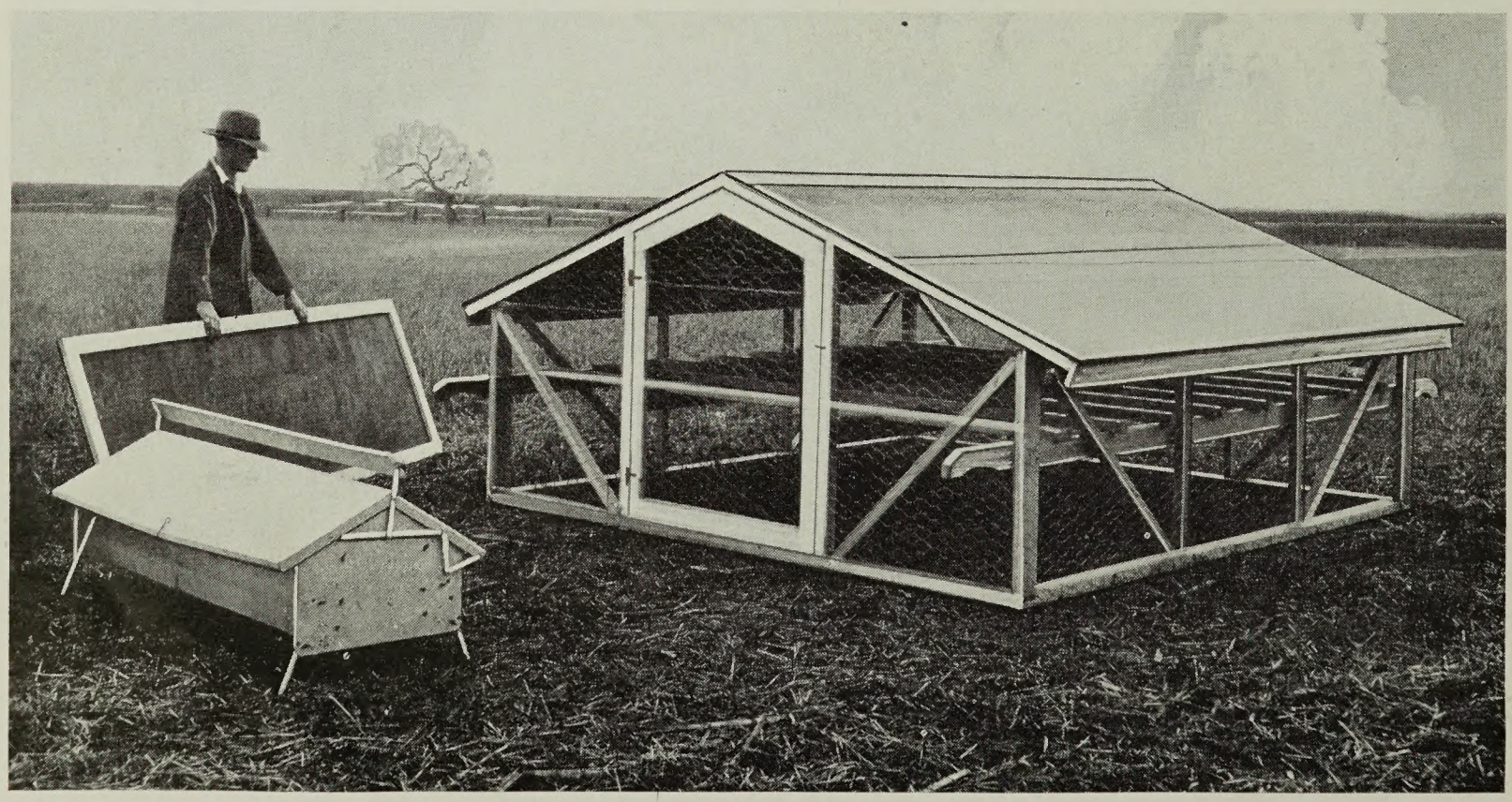
The summer range shelter shown in the plan is to be used at the end of the eight to ten week brooder period. It provides shade and rain protection on clean ground as well as splendid ventilation.

A wind guard may be hung in place on the windward side to provide shelter from driving rain. In the early spring and late fall the wind guard will prevent chilly winds from ruffling the pullets' feathers.

Anyone can construct this summer range shelter easily and at low cost. The roof consists of four pieces of Celotex, painted with two coats of asphalt before it is nailed. When treated in this manner it becomes practically indestructible so far as exposure to the elements is concerned.

This summer range shelter is intended to house 125 Leghorn pullets, or approximately 100 heavy breed pullets, to maturity. It should be moved at weekly intervals in order to keep the surrounding soil as clean as possible.

It is good poultry practice and much cheaper to provide range shelters and to profit from this low cost management to produce laying pullets.



The range shelter is the latest addition to the poultryman's equipment.
Complete plans will be found in the back of this booklet.

APPLICATION OF CELOTEX ON WALLS AND ROOFS OF POULTRY HOUSES

Celotex Building Board is nailed to studs and rafters. These plans provide for the use of Celotex as an exterior finish and insulation. The walls may be covered with wood siding, shingles or stucco if desired, in which case the Celotex functions as insulation alone. When used on the roof it is covered with roof boards and shingles or roofing. The Celotex may be nailed to the underside of roof rafters to form the ceiling. Here double-thick (¾ in. or ⅞ in.) Celotex is strongly recommended for its extra insulating value. (See section entitled "Exterior Covering.")

Here you see the application of wood siding over Celotex. This is common practice in building Celotex insulated houses.

Framing

Studs, joists, and rafters are to be framed (16 in. o. c.) as in ordinary frame construction. 2x4 in. headers are to be inserted between the framing members at the ends of all Celotex boards to serve as a nailing base.

Application of Celotex

The Celotex boards shall be applied lengthwise and directly to all framing members with ample bearing for nailing along all edges.

Leave a $\frac{3}{16}$ in. space between adjoining boards and ends of boards. Celotex is cut scant in width and length to allow for this space. Never force Celotex into place.

Around window and door frames, or where a snug joint is desired, Celotex is to be brought to close contact with the frames.

Nailing

Nail Celotex first to intermediate framing members and then around the edges. Use standard 1½ in. galvanized roofing nails with ⅜ in. heads, spacing the nails 3 in. apart along the edges and 6 in. apart along intermediate framing members and ⅜ in. from the edge of the board.

Use 8d common nails for nailing ¾ in. or ⅞ in. Celotex boards. Drive the nails until the heads are slightly below the surface of the Celotex. When used between the rough and finished floor it need be nailed only enough to hold it in place before laying the finished floor.

Roof

Celotex is nailed directly to the top of roof rafters with the roof boards laid on and nailed through the Celotex to the rafters. Roof boards are covered with roll roofing, wood shingles or other type roofing.

Floor

To secure a warm floor in portable brooders Celotex is painted on the underside with asphalt and nailed to joists or skids. The floor boards are then placed and nailed through the Celotex. This application provides a damp-proof tight floor.

Exterior Covering

Celotex sized and painted two coats, for weather protection, with batten strips over joints, provides a permanent and pleasing exterior surface.

Wood siding may be applied directly over Celotex without the use of building paper, being nailed directly through to the studs. The siding ends should fall directly over a stud to serve as a nailing base.

Shingles may be used as exterior finish, in which case 1x2 in. wood strips are nailed horizontally across the surface of the Celotex to serve as a nailing base for the shingles and spaced to fit the particular shingles used.

Painting

In interior work, the smooth surface of Celotex offers an improved painting surface.

Over a sized or primed Celotex surface any flat paint may be used.

For glue-sizing Celotex, dissolve 1½ pounds of shell or chip glue in 1 gallon of boiling water. Apply while warm, swiftly and evenly with a brush.

Instructions on glue-sizing Celotex apply equally to interior or exterior painting.

When Celotex is painted with ordinary linseed oil paints the joints are covered with strips of wood, producing paneled walls and ceiling.

We have investigated a number of prepared primers. Most of those developed for use on plaster or wood surfaces are not satisfactory for Celotex. Accordingly, cooperative efforts were initiated with many of the outstanding paint manufacturers, which resulted in specially developed sizes, particularly suitable for Celotex. Tests in the Celotex Laboratories showed the following to be satisfactory in every respect.

RECOMMENDED OIL OR VARNISH SIZES

Name	Manufacturer	Main Office
Primer for Celotex	DeVoe & Raynolds and Affiliates	1 W. 47th St., New York City
Celo-Size	E. I. Du Pont de Nemours & Co.	Wilmington, Del.
Special Primer No. 44	The Glidden Co. and Affiliates	1833 Seward St., Chicago, Ill.
Fill-Coat	Benjamin Moore & Company	415 N. Green St., Chicago, Ill.
Peel-Kill Pigment Primer No. 7851	Marietta Paint & Varnish Co.	Marietta, Ohio
Nepto-Seal	The Lowe Brothers Company	1048 W. 37th St., Chicago, Ill.

The foregoing prepared sizes have the advantage that they may be obtained ready mixed and properly proportioned for direct application to Celotex. Coverage may vary slightly for the different sizes, and in addition, technique in application affects the spread somewhat. It is safe to assume that on an average, the sizes listed above will cover from 150 to 200 sq. ft. per gallon. They may be obtained at a cost in the neighborhood of $2.00 or $2.50 per gallon. Thus, it follows that the materials cost for a satisfactory size coat is only between 1c and 1½c per sq. ft. The expenditure is amply repaid by greater coverage of subsequent paint coats and more satisfactory appearance.

For complete information on painting and decorating Celotex write Celotex Service Bureau for Technical Note No. 43.

Interior Paint and Disinfectant

Whitewashing the interior of the poultry house will not only improve appearance but will aid in sanitation. More durable than common whitewash, is that made up on the following "Government Whitewash Formula."

"One peck of lime slaked in boiling water and kept just covered with water while slaking. Strain through a coarse cloth. Add two quarts of fine salt dissolved in warm water, a pound of rice meal or ground rice boiled in water to a thin paste, one-fourth pound of whiting and one-half pound of glue dissolved in warm water. Adding sweet skim milk makes a more lasting whitewash.

"Mix all the ingredients thoroughly and let stand covered for two or three days, stirring occasionally. If it is desired to have a disinfectant as well as a whitewash, heat the mixture before using and add one-half pint of crude carbolic acid."

PROTECTIVE TREATMENT OF CELOTEX WALLS OF POULTRY HOUSE

Note: Any fibre board, gypsum board, or wall board used on the interior of poultry houses is subject to this pecking habit of the birds

CHICKENS have a tendency to peck at surfaces. It is absolutely necessary therefore that Celotex and other materials used in poultry houses be protected. The protective treatment should be applied to all Celotex wall surfaces to a height of 24 in. from the floor line and to all other areas accessible to the chickens.

Wood boarding, metal covering or roofing felt may be tacked over the Celotex on all areas which can be reached by the chickens.

A special treatment which has proven particularly satisfactory is described in the following paragraph and is illustrated in the sketch below.

Screen Wire Application Over Celotex

Strips of 12 or 16 mesh galvanized wire fly screen 24 in. wide should be used. If the Celotex is on the outside of the studding, the screen wire is firmly stretched and nailed across the studs extending up from the floor level before nailing the Celotex to the studding. If the Celotex is used as interior lining, the screen is stretched directly over the Celotex and nailed through to the studding. Lead and oil paint or whitewash should be applied over this screen wire-on-Celotex installation.

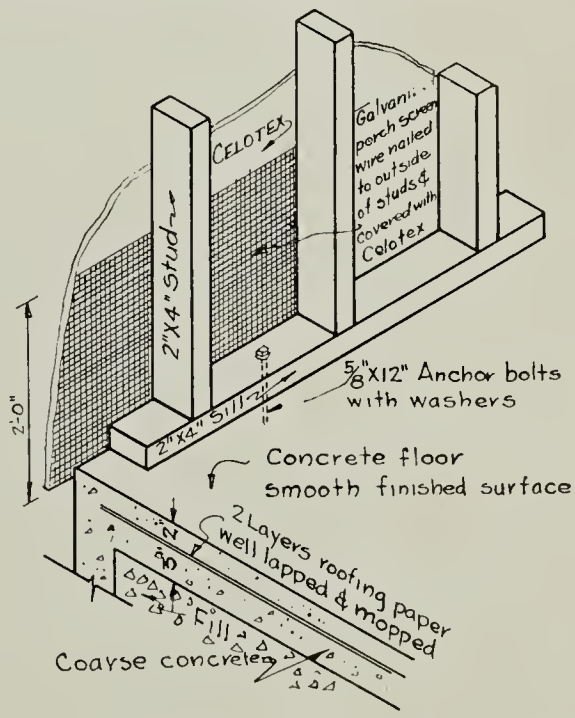
Celotex Farm Paint

A cheap cement paint prepared with materials generally available on farms may be directly applied to Celotex as a protective surface treatment, although this is not quite as effective nor as readily applied as is the fly screen method described. This paint has a gray cement color and consequently does not darken the interior of the poultry house. It is durable over a long period without renewing and has been found to be practical if carefully applied. Its use on wood is not recommended because of the expansion and contraction of the wood.

Mix equal parts (by volume) of Portland Cement and fine, clean, sifted sand, free from loam. Add *sour skim milk* until a thick paint consistency is obtained. Do not use water in the mix. Experience has shown that it is better to mix only small quantities at a time. Use half pail quantity and *stir frequently* when using to keep the heavier particles from separating out and settling on the bottom.

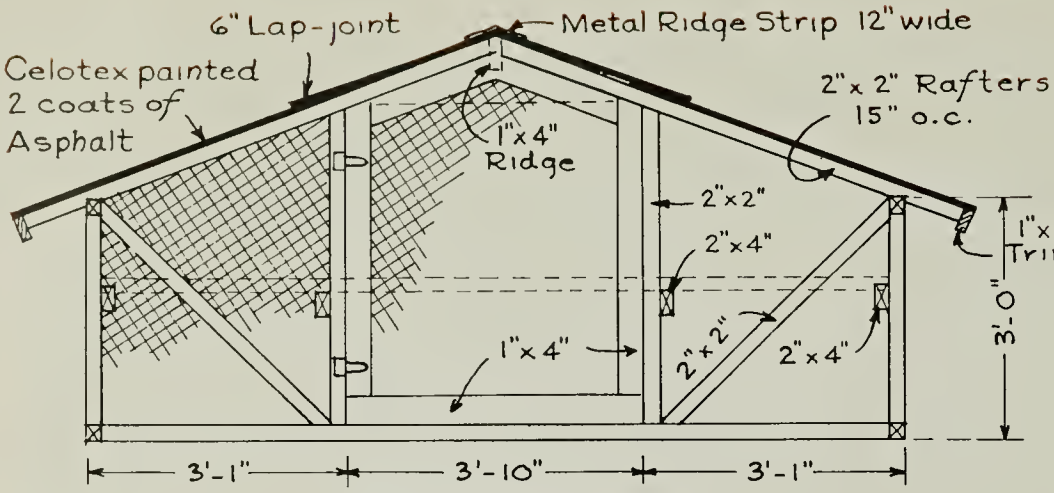
Twelve pounds Portland Cement, twelve pounds sand, one gallon sour skim milk. These quantities are also approximately expressed in volumes as follows: one gallon measure full Portland Cement, one gallon measure full sand, one gallon sour skim milk, will cover approximately 80 square feet of Celotex, two coats.

Two coats are necessary. Apply with a whitewash brush, allowing at least twelve hours for the first coat to dry before applying the second. For the best work a third coat is recommended, allowing the paint to thoroughly dry before turning the chicks or laying flock into the house.

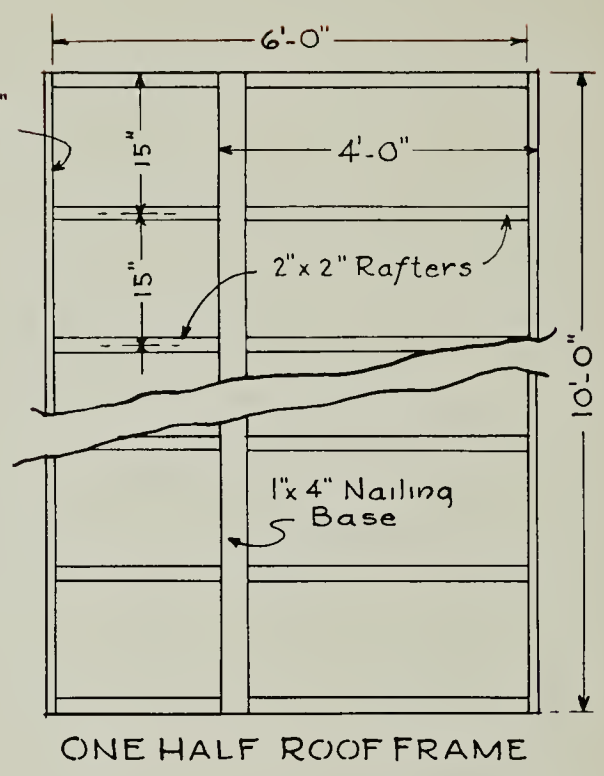


SCREEN APPLICATION

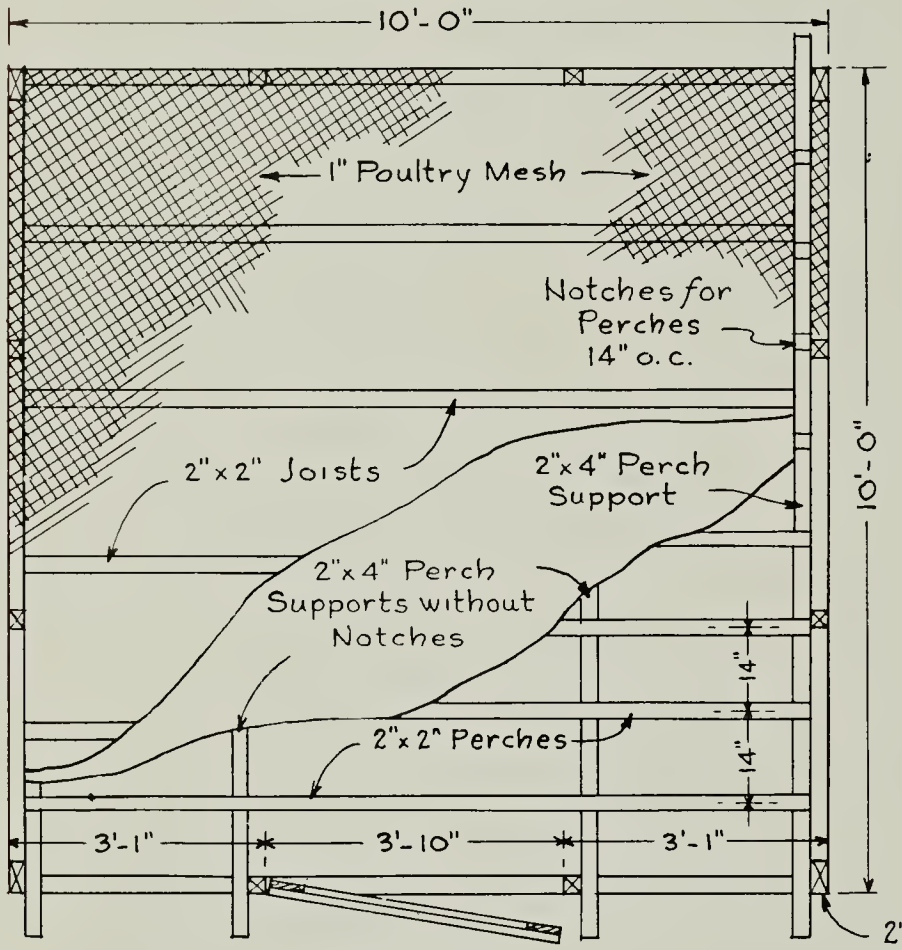
This wall is rat proof and puncture proof. With paint over the protecting screen area, it is sanitary and free from insect breeding places.



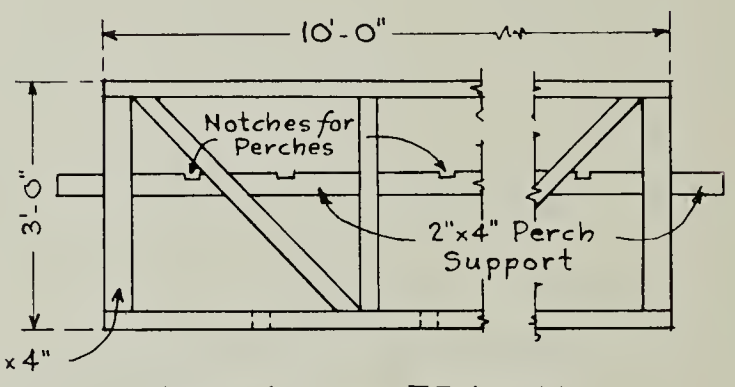
FRONT FRAMING



ONE HALF ROOF FRAME

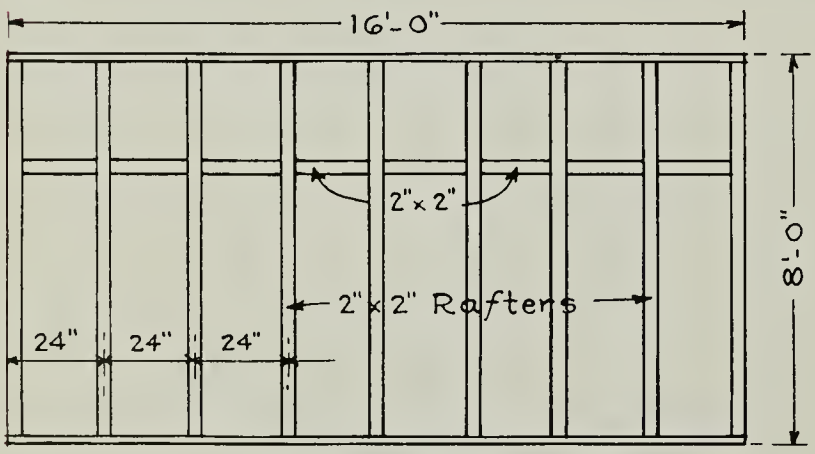


PLAN

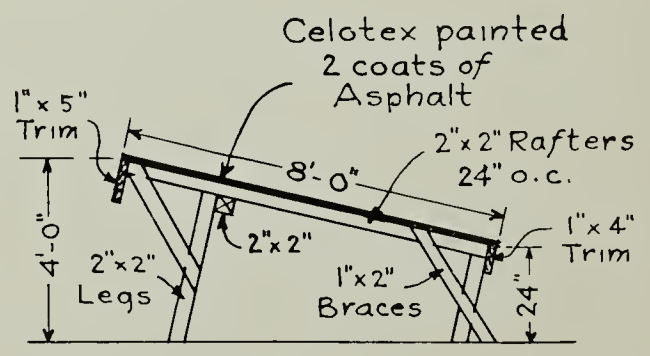


SIDE WALL FRAMING

SUMMER RANGE SHELTER



ROOF FRAMING



SIDE VIEW

RANGE SHADE SHELTER

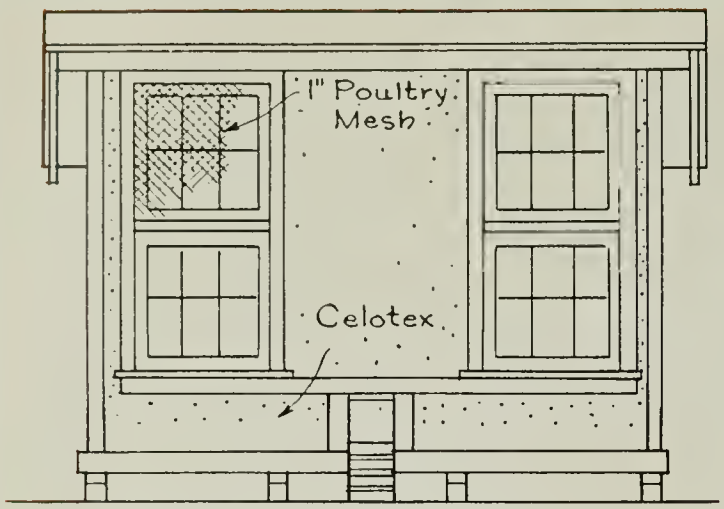
BILL OF MATERIAL
for
SUMMER SHELTER

			Extension	Price	Amount
2	2″x4″x14′-0″	Perch Supports			
2	2″x4″x10′-0″	Perch Supports			
1	2″x4″x12′-0″	Corner Studs			
15	2″x2″x12′-0″	Rafters, Studs, Bracing			
18	2″x2″x10′-0″	Sills, Plates, Joists, Perches			
8	1″x4″x10′-0″	Ridge, Trim, Door Frame, Roof Nail Base			
4	4′x10′	Celotex Building Board			
10 lin. ft.	12″ wide	Tin Ridge Strip			
90 lin. ft.	36″ wide	1″ Poultry Mesh			
2	4″ “T”	Hinges for Door			
1		Door Latch			
2 gal.		Asphalt Paint			
2 lbs.	1½″—⅜″ heads	Galvanized Roof Nails			
½ lb.	2″—⅜″ heads	Galvanized Roof Nails			
2 lbs.	10d	Common Nails			
2 lbs.	8d	Common Nails			
1 lb.	6d	Common Nails			

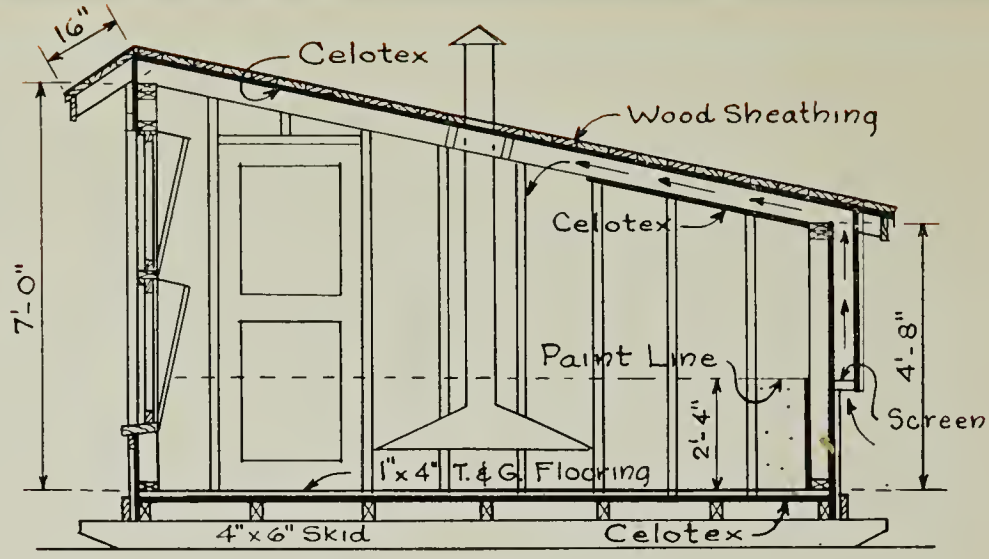
BILL OF MATERIAL
for
SHADE SHELTER

9	2″x2″x16′-0″	Rafters, Legs, etc.			
1	1″x5″x16′-0″	Trim			
1	1″x4″x16′-0″	Trim			
2	1″x2″x16′-0″	Bracing			
32 lin. ft.	⅜″x2″	Joint Strips			
4	4′x8′	Celotex Building Board			
2 gal.		Asphalt Paint			
2 lbs.	1½″—⅜″ heads	Galvanized Roof Nails			
1 lb.	10d	Common Nails			
1 lb.	6d	Common Nails			

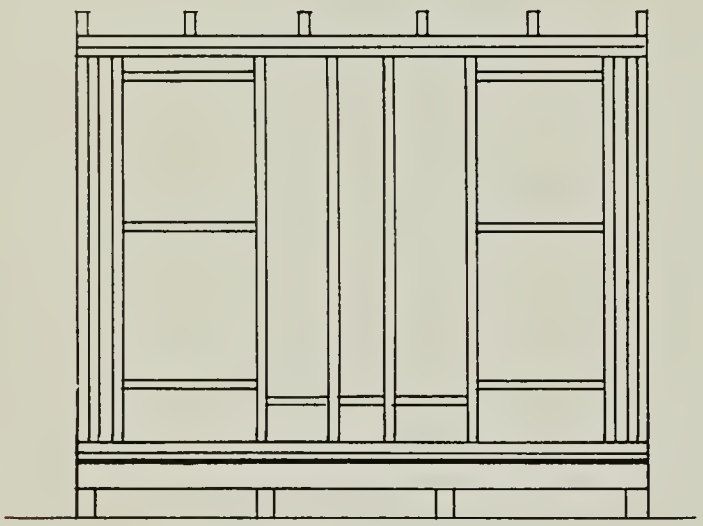
CELOTEX
BRAND
INSULATING CANE BOARD
(REG. U. S. PAT. OFF.)



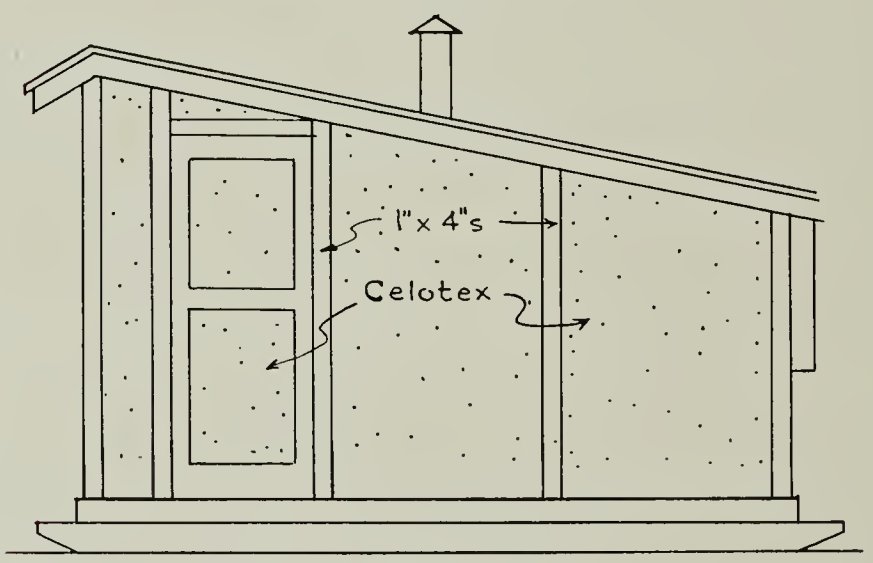
FRONT ELEVATION



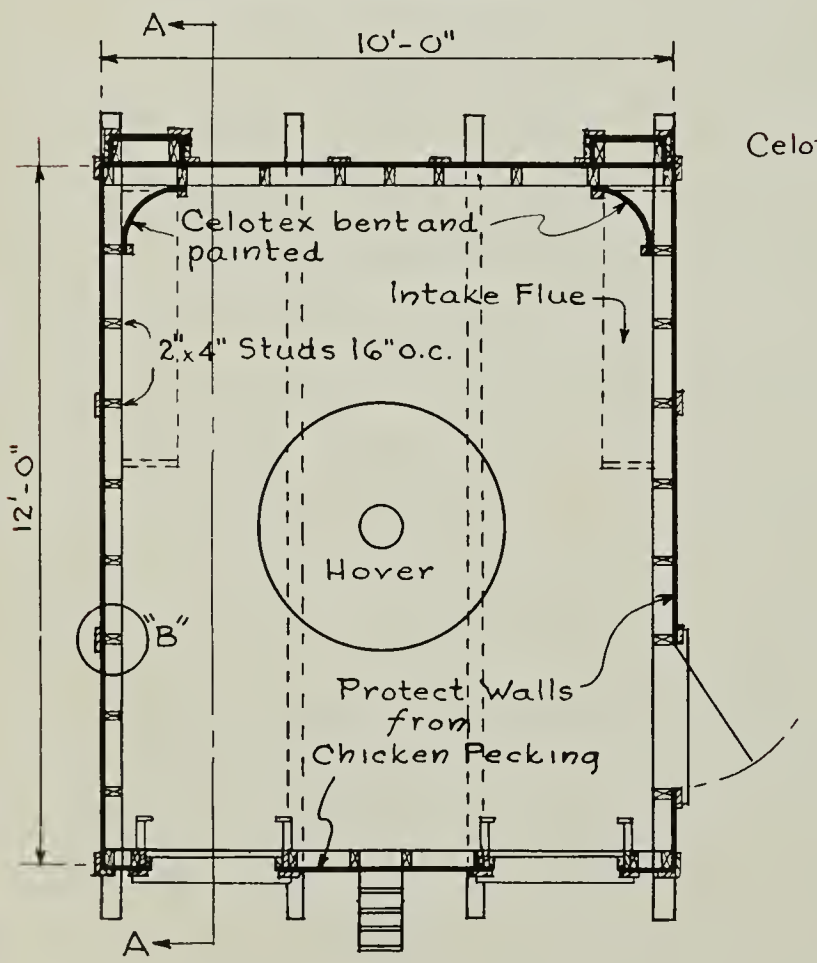
SECTION A-A



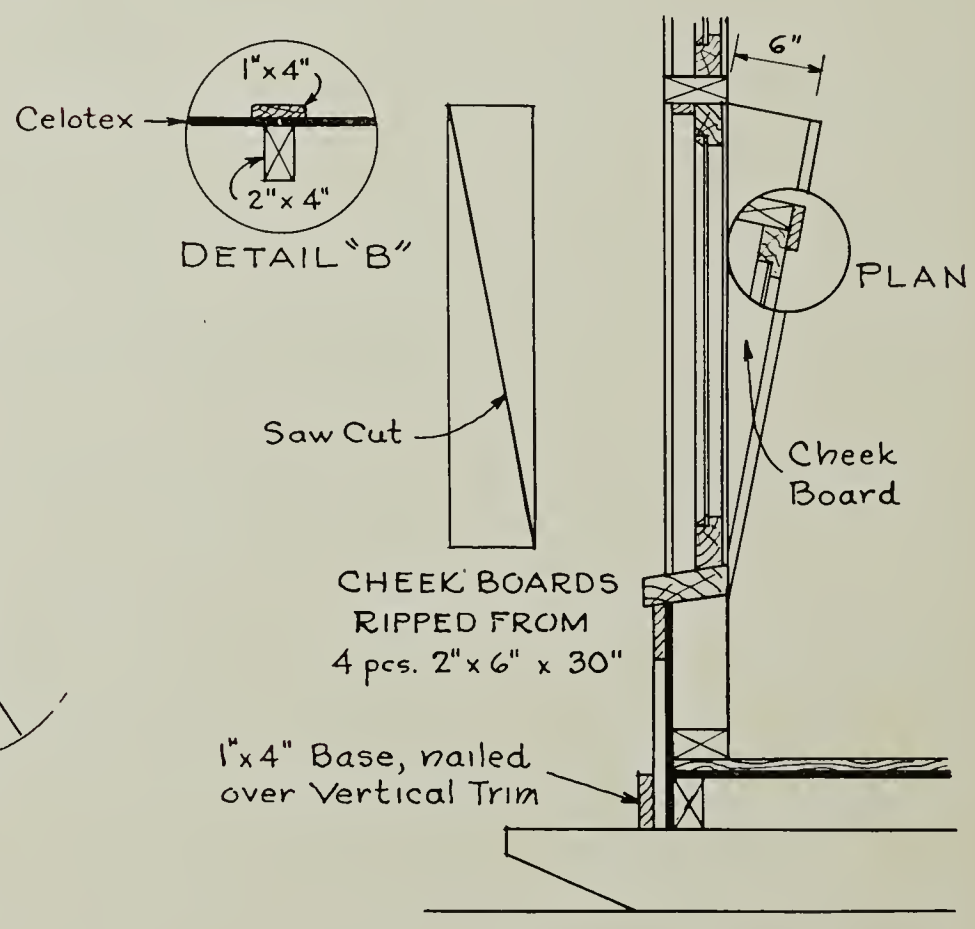
FRONT FRAMING



SIDE ELEVATION



FLOOR PLAN
Scale: $\frac{1}{4}$"=1'-0"



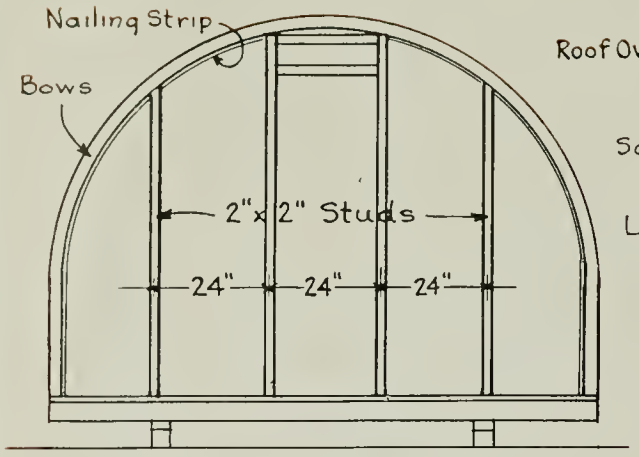
DETAIL SECTION
Scale: $\frac{3}{4}$"=1'-0"

BROODER HOUSE

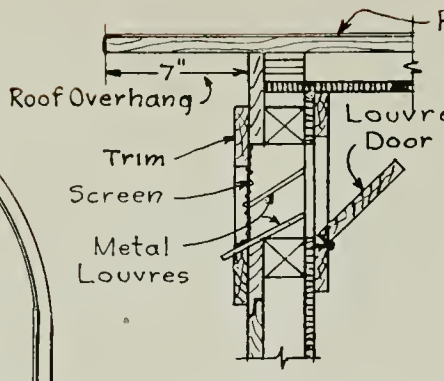
BILL OF MATERIAL
for
SHED TYPE BROODER HOUSE

			Extension	Price	Amount
4	4″x6″x14′-0″	Skids			
2	2″x6″x12′-0″	Window Stools and Cheeks			
20	2″x4″x14′-0″	Rafters, Studs, Headers			
5	2″x4″x12′-0″	Sills, Plates, Headers			
15	2″x4″x10′-0″	Joists, Sills, Plates, Studs			
25	1″x6″x16′-0″	Roof Sheathing			
33	1″x4″x12′-0″	T. & G. Flooring			
19	1″x4″x16′-0″	Trim and Door Framing			
50 lin. ft.	½″x1¼″	Window Stops			
4	4′x8′	Celotex Building Board			
6	4′x10′	Celotex Building Board (roof)			
6	4′x12′	Celotex Building Board (roof)			
1—6 lt.	10″x12″	Barn Sash			
2	5″ “T”	Hinges for Door			
1		Door Latch			
4	3″ “T”	Hinges for Windows			
15 lin. ft.	36″ wide	1″ Poultry Mesh			
50 lin. ft.	24″ wide	Screen Wire			
2 squares	3 ply	Roll Roofing			
9 lbs.	1½″—⅜″ heads	Galvanized Roof Nails			
6 lbs.	20d	Common Nails			
2 lbs.	10d	Common Nails			
14 lbs.	8d	Common Nails			

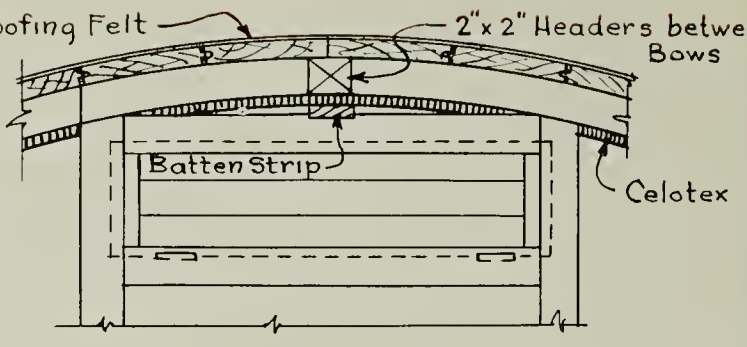
CELOTEX
BRAND
INSULATING CANE BOARD
(REG. U. S. PAT. OFF.)



BACK WALL FRAMING

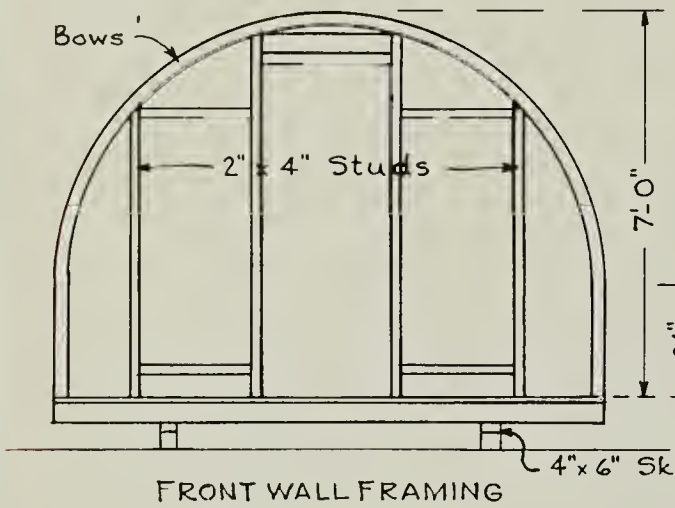


WALL SECTION

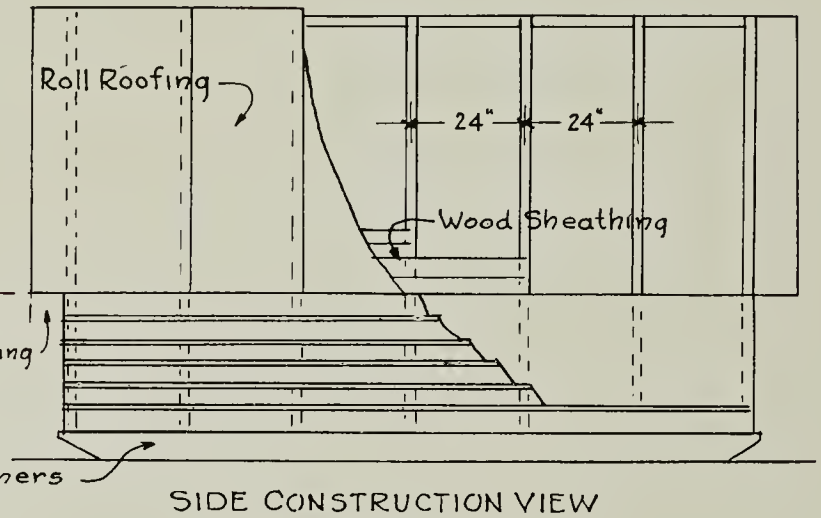


LOUVRE OPENING

DETAIL OF LOUVRE DOORS ON END WALLS
Scale : 1" = 1'-0"

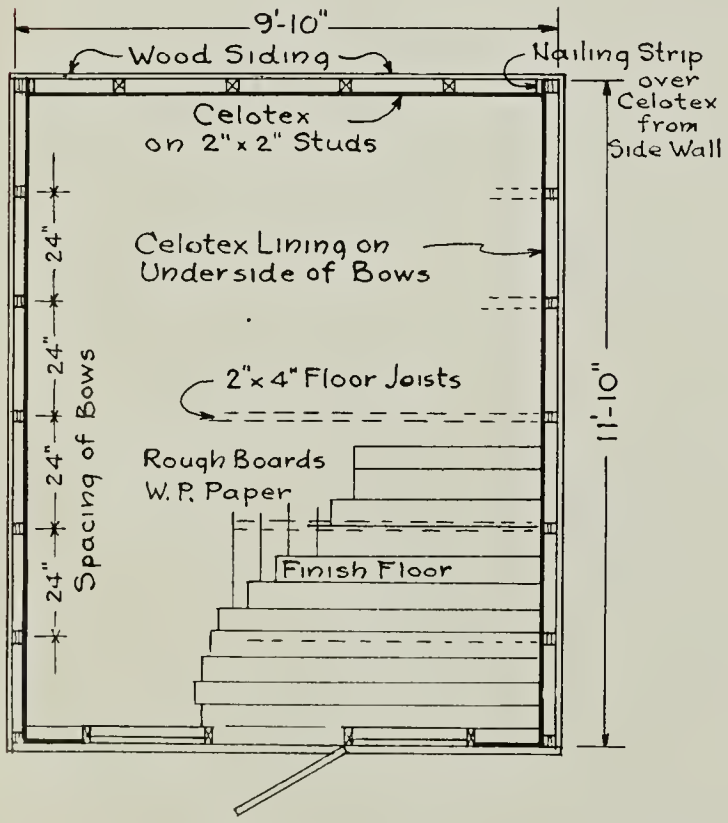


FRONT WALL FRAMING

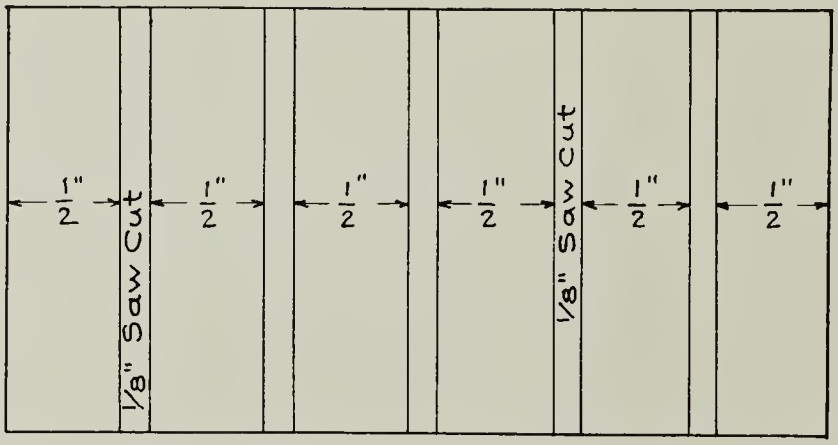


SIDE CONSTRUCTION VIEW

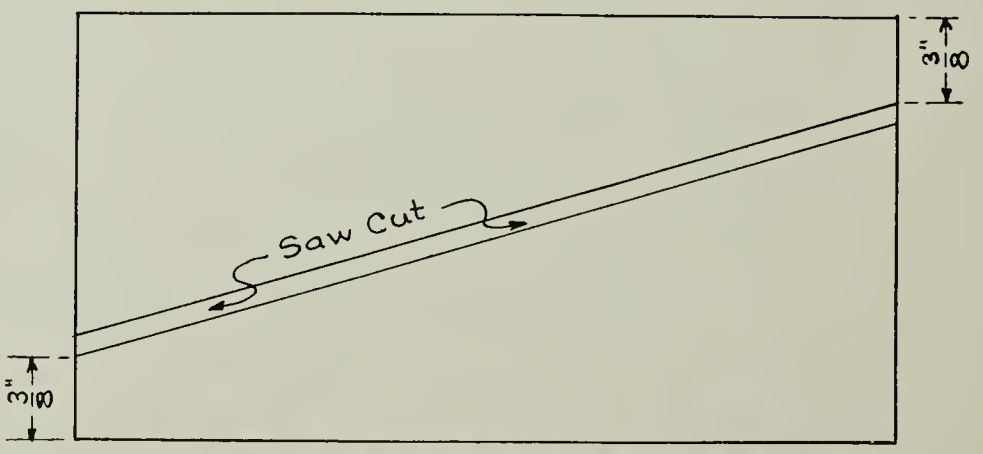
Scale : 1/4" = 1'-0"



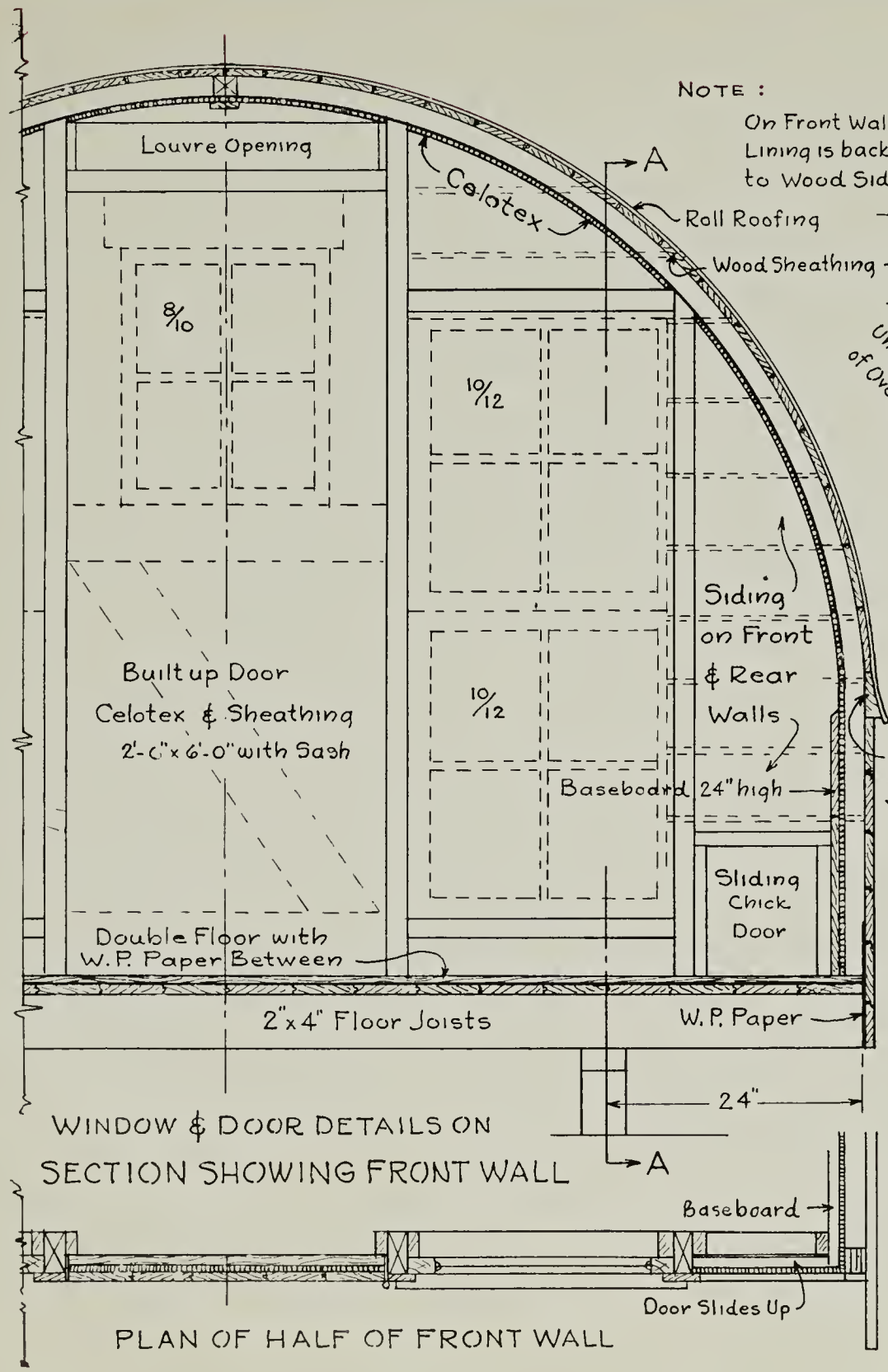
PLAN
Scale : 1/4" = 1'-0"



2"x 4"s RIPPED INTO 1/2" STRIPS FOR BOW RAFTERS "B"
Full Size

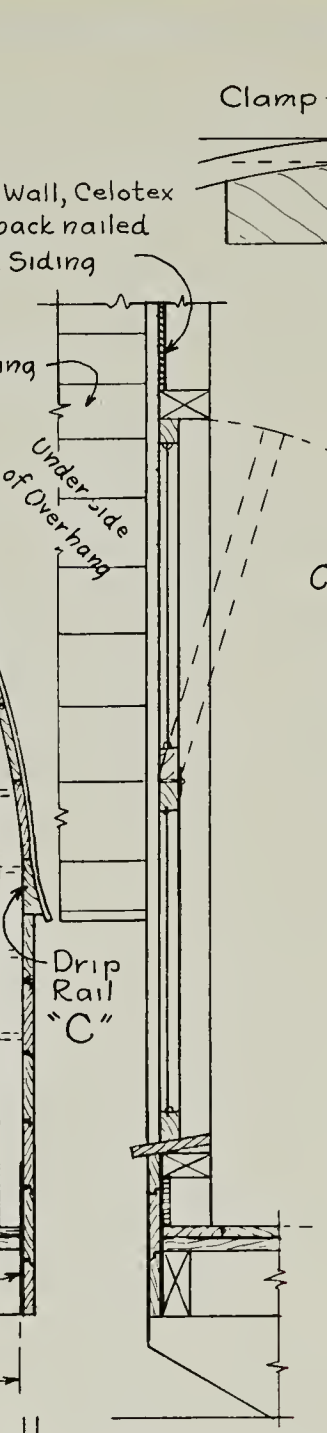


2"x 4" CUT FOR DRIP RAIL "C"
Full Size

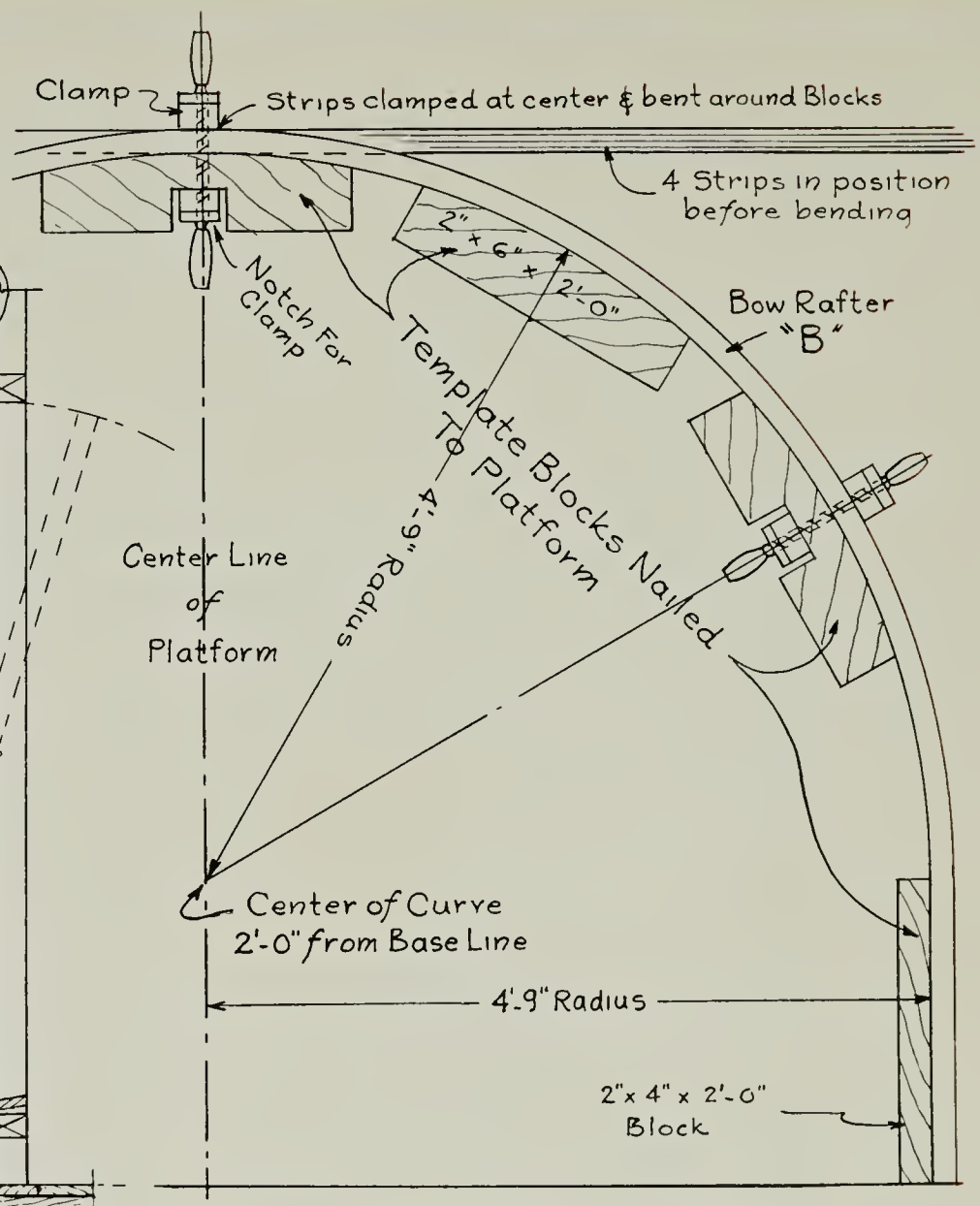


WINDOW & DOOR DETAILS ON
SECTION SHOWING FRONT WALL

PLAN OF HALF OF FRONT WALL



WALL SECTION
A - A



HALF SECTION DETAIL OF
ERECTION OF BOW RAFTERS

TO CONSTRUCT BOW RAFTERS

Rip 2"x 4"s into $\frac{1}{2}$" strips. Lay 4 members together, clamp at top center & spring around Template Blocks nailed to Working Platform. Nail Bows with coated nails. Lower end of 2"x 4" x 2'-0" Block may be used as a Cutting Guage for Bows (length) Completed Bows measure $1\frac{3}{4}$" x 2" x 19'-9" Floor may be used for Working Platform.

Scale : $\frac{3}{4}$" = 1'-0"

CYLINDER BROODER HOUSE

BILL OF MATERIAL
for
CYLINDER BROODER HOUSE OF CELOTEX

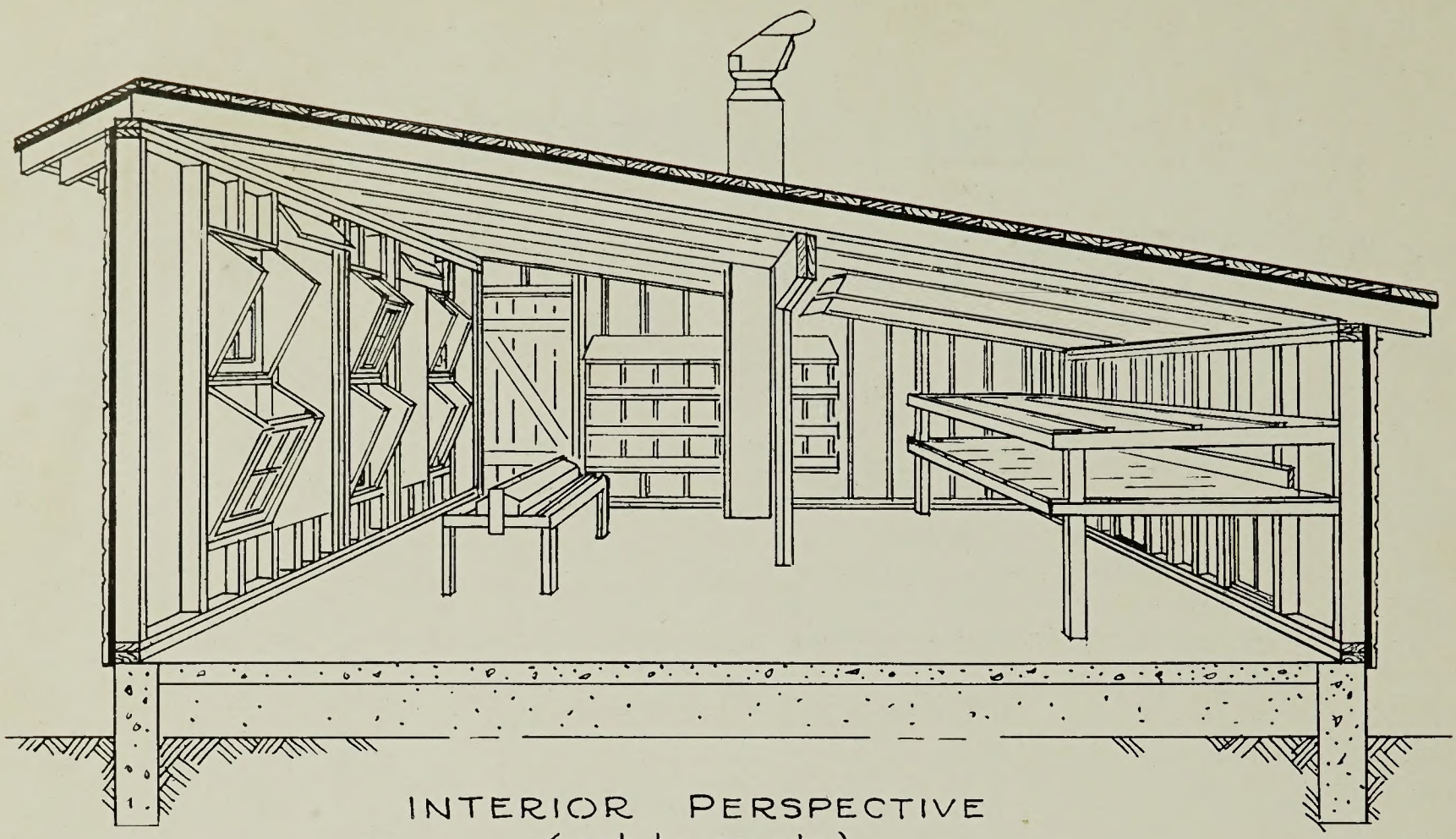
			Extension	Price	Amount
7	2″x4″x10′-0″	Y. P. Floor Joists			
3	2″x4″x14′-0″	Door and Window Framing and Drip Board			
4	2″x6″x12′-0″	Y. P. Skid Runners			
5	2″x4″x20′-0″	Bow Rafters (ripped ½″ strips)			
3	2″x2″x14′-0″	Fir. Front Wall Framing			
6	2″x2″x 8′-0″	Y. P. Back Wall Framing			
23	2″x6″x12′-0″	T & G Dressed Flooring for Double Thick			
	or				
{22	1″x6″x12′-0″	No. 3 Boards for Rough Floors			
{26	1″x6″x10′-0″	T & G Flooring			
42	1″x6″x14′-0″	Y. P. T & G Roof Boards			
24	1″x6″x10′-0″	Fir Siding for Front and Back Walls			
10	1″x6″x12′-0″	Fir Siding for Side Walls			
2	1″x5″x10′-0″	Louver Boxes			
1	1″x6″x10′-0″	Vent Doors			
6	1″x12″x12′-0″	Wall Base Boards			
40 lin. ft.		½″ Quarter Round			
80 lin. ft.		Lattice			
2 Rolls		Roof Felt			
4		Barn Sash 4 Lt. 10/12			
1		Barn Sash 4 Lt. 8/10 (door)			
3	1″x6″x12′-0″	T & G Boards for Door, 2′-6″x6′-6″ Lined with Celotex			
1	1″x6″x14′-0″	For Door Cleats			
2	4″x24″	No. 20 Gauge Metal for Louvers			
6 pr.		2″ Butt Hinges			
1½ pr.		5″ T Hinges			
1		Latch and Lock complete for Door			
5 lbs.		8d Cement Coated Nails			
10 lbs.		8d Common Nails			
6 lbs.		16d Common Nails			
3 lbs.		8d Box Nails			
5 lbs.		1¼″x⅜″ Head Galvanized Nails			
9	4′x10′	Celotex Sanded 18			

CELOTEX
BRAND
INSULATING CANE BOARD
(REG. U. S. PAT. OFF.)

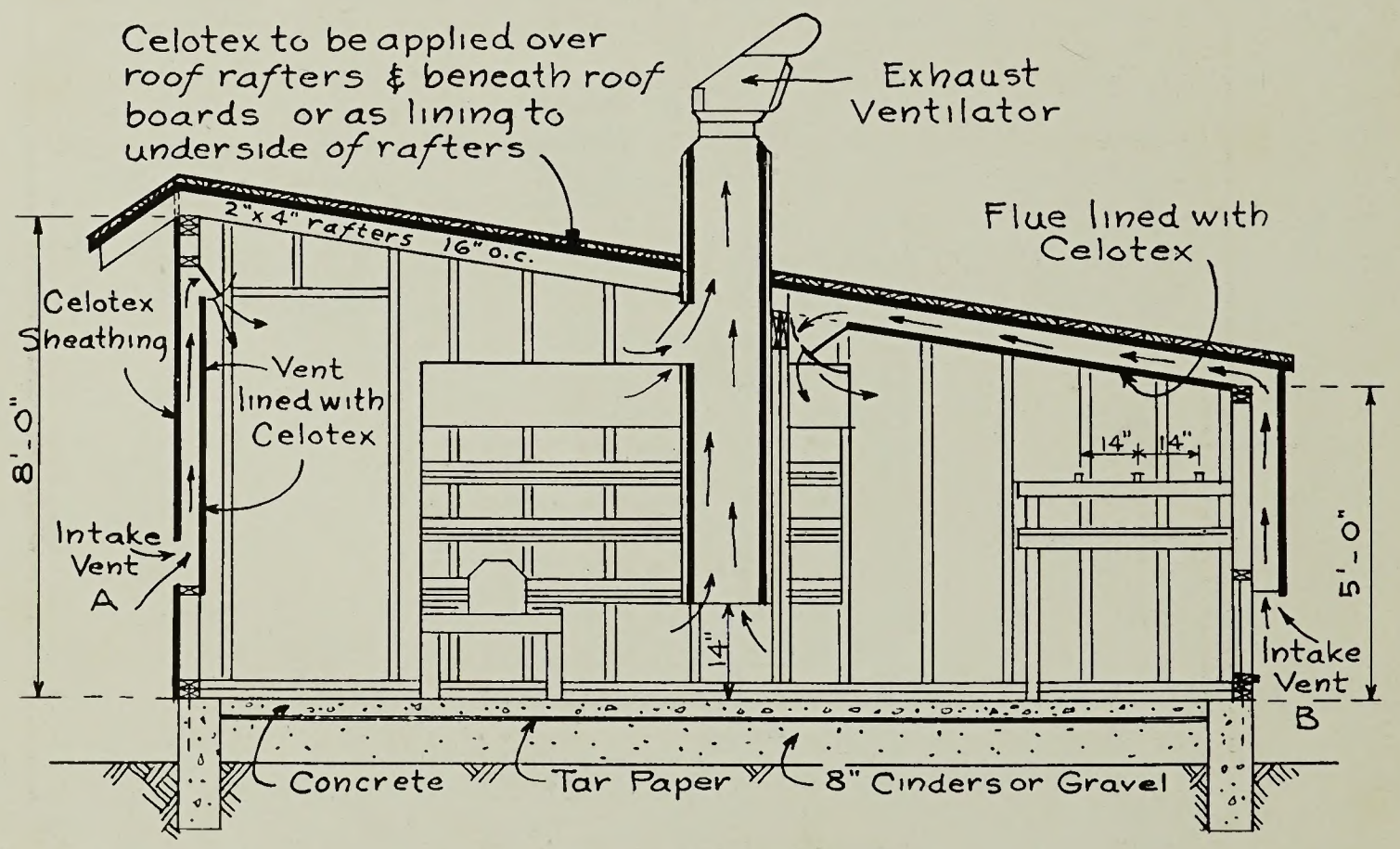
BILL OF MATERIAL
for
THE LAYING HOUSE

			Extension	Price	Amount
7	2″x6″x10′-0″	Purlin and Post			
28	2″x4″x20′-0″	Sills, Plates, Rafters, Framing Roosts			
6	2″x4″x12′-0″	Studs, Framing Roosts			
20	2″x4″x 9′-0″	Sills, Plates, Studs			
18	2″x4″x 8′-0″	Studs, Headers			
8	2″x2″x10′-0″	Perches			
1000 lin ft.	1″x6″	Roof Sheathing			
42 lin ft.	1″x6″	Trim			
540 lin ft.	1″x4″	T. & G. Flooring for Dropping Boards and Outlet			
1800 lin. ft.	1″x4″	Drop Siding			
300 lin. ft.	1″x4″	Trim			
50 lin ft.	1″x6″	Trim			
100 lin. ft.	½″x1¼″	Window Stops			
14	4′x 8′	Celotex Building Board			
10	4′x10′	Celotex Building Board (roof)			
4	4′x12′	Celotex Building Board			
6—6 lt.	10″x12″	Barn Sash			
3—3 lt.	9″x12″	Cellar Sash			
2	2′-6″x6′-8″	Outside Doors			
4	5″ “T”	Hinges for Doors			
2		Door Latches			
6	3″ strap	Hinges for Perches			
2	6″ strap	Hinges for Nests			
16	3″ “T”	Hinges for Windows and Vents			
25 lin. ft.	36″ Wide	1″ Poultry Mesh			
100 lin. ft.	24″ Wide	Screen Wire			
5 squares	3 ply	Roll Roofing			
4 squares		Tar Paper for Floor			
220 cu. ft.		Concrete			
8	½″x8″	Anchor Bolts			
15 lbs.	1½″—⅜″ heads	Galvanized Roof Nails			
9 lbs.	20d	Common Nails			
4 lbs.	10d	Common Nails			
12 lbs.	8d	Common Nails			
18 lbs.	8d	Casing Nails			

CELOTEX
BRAND
INSULATING CANE BOARD
(REG. U. S. PAT. OFF.)



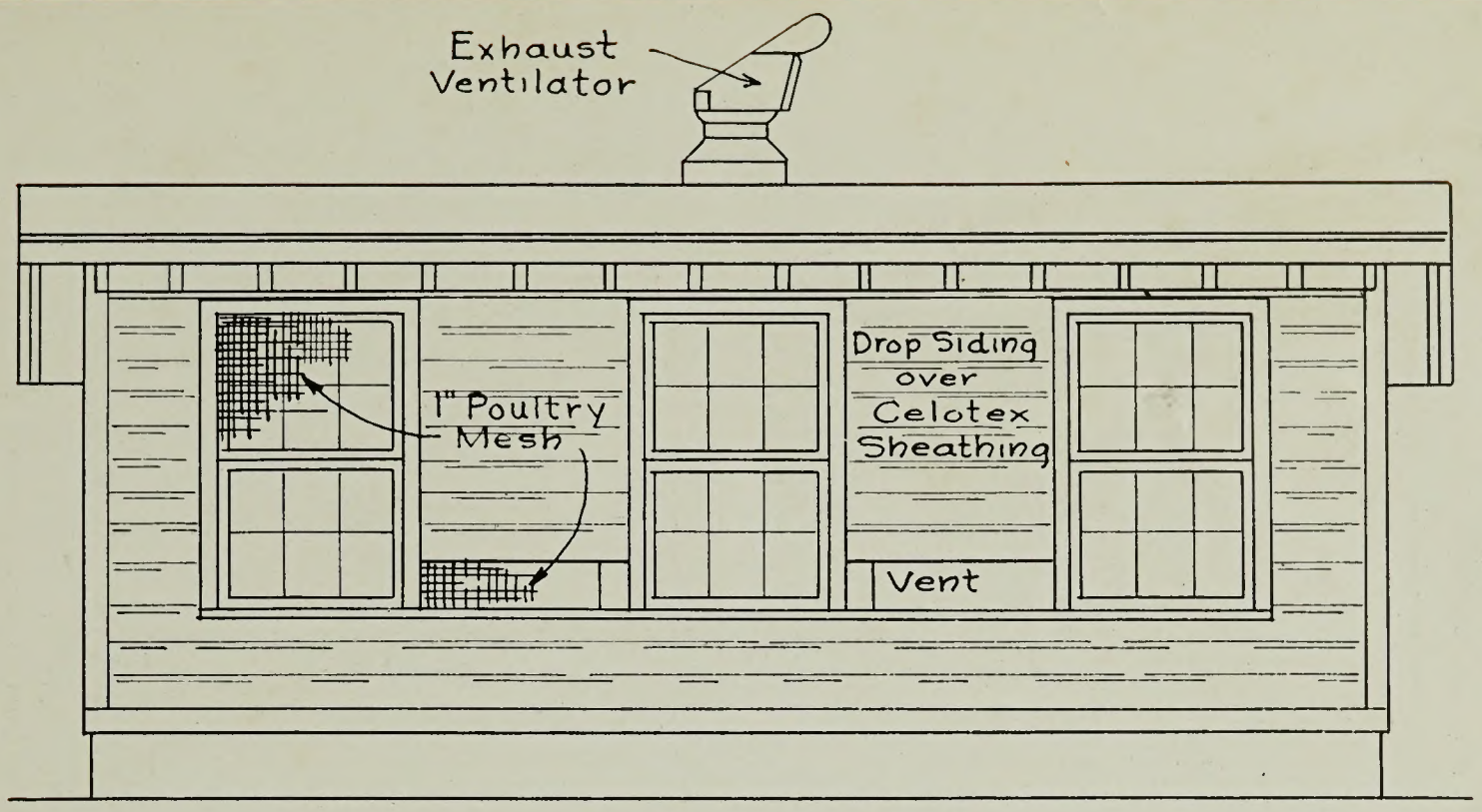
INTERIOR PERSPECTIVE
(not to scale)



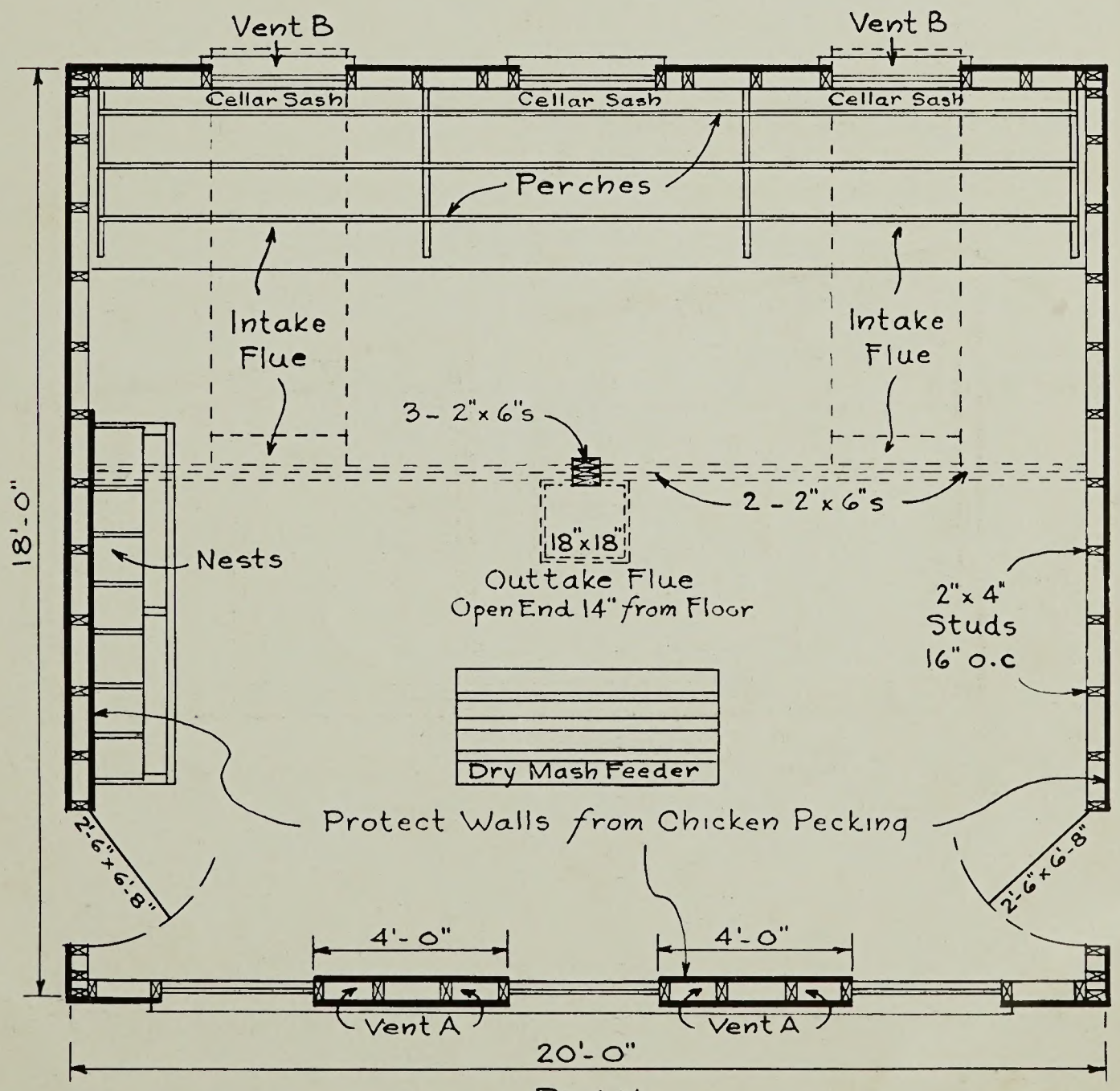
SECTION

LAYING HOUSE - SHED TYPE

Scale : $\frac{1}{4}$" = 1'-0"



FRONT ELEVATION



PLAN

CHECK-LIST

Many old poultry houses can be brought up to date and made modern in every sense of the word with small expense plus a little planning and labor. The following list shows frequent troubles which are encountered in old-fashioned poultry houses. The first column shows the condition, the second, the cause of this condition, and the third, the remedy.

CONDITION	CAUSE	REMEDY
Foul Air	Insufficient Ventilation	Install intakes and outlets of proper size as shown in plan.
	Ventilators not working	
	a. Head not above ridge of roof	Change shaft to meet requirements as shown in plan.
	b. Outlet shaft too small	Change shaft to meet requirements as shown in plan.
	c. Outlet shaft too high from floor	Change shaft to meet requirements as shown in plan.
	d. Outlet not connected to head	Change shaft to meet requirements as shown in plan.
	e. Cold walls of shaft above roof cause backdrafts	Line with Celotex.
	f. Intakes not open	Open to admit sufficient outside air.
	House too cold or drafty to permit proper flow of air	Tight, insulated walls and ceiling essential.
Damp Walls and Ceilings	Cold walls and roof	Celotex lining.
	Insufficient ventilation	See above.
	Overcrowding	Not less than 3½ to 4 square feet per bird
Wet Litter and Floor	Seepage through floor	Waterproof felt and new surface floor.
	Insufficient ventilation	See above.
	Overcrowding	See above.
Cold House (Less than 40° to 50°)	Thin walls and roof	Celotex lining.
	Too high roof	Install lower ceiling of Celotex.
	Too few birds	Celotex partition to reduce to proper size; or increase flock.
Drafty House	Cold walls	Celotex lining.
	Holes and cracks in walls	Celotex lining.
	Length greater than 1½ times depth	Partitions to form almost square rooms.
Dark House	Inadequate window openings	Provide 1 sq. ft. glass for every 10 sq. ft. floor.
Chickens Crowd or Pile	Uneven light	Add windows under dropping boards in rear wall.
	Uneven heat (brooder) (Stove too hot, probably because of heat leaking walls.)	Celotex lining on walls and roof; reduce heat in stove.

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